AN
HISTORICAL SKETCH
OF
MEDICINE AND SURGERY,
FROM THEIR
ORIGIN
TO THE
PRESENT TIME;
AND OF THE
PRINCIPAL AUTHORS, DISCOVERIES, IMPROVEMENTS, IMPERFECTIONS and ERRORS.

By W. BLACK, M.D.

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MEDICINE AND SURGERY,

ORIGIN

PRESENT TIME;

PRINCIPAL AUTHORS, DISCOVERIES, IM-

By W. BLACK, M.D.

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A CHRONOL ICAL CHART

MEDICAL an RGICAL AUTHORS;

BY W. ACK, M.D.

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1500 · 1600 · 1700

AN
HISTORICAL SKETCH
OF
MEDICINE AND SURGERY.

CHAP. I.

INTRODUCTION.

AUTHORS of eminence have expreſſed their wiſhes, that every thing certain and eſtabliſhed in Phyſic was reduced into a moderate compaſs, entirely detached from theory and ſpeculation. Truth however compels me reluctantly to obſerve (with ſubmiſſion to better judgements) that the defects which are commonly ſaid to run through general hiſtory, or the extraordinary narratives of travellers, may without injuſtice be laid to the charge of Medical Authors; half of them are filled with falſities. The ambition of gaining diſciples, and of founding ſeparate Sects, has given riſe to a multiplicity of jarring ſyſtems in Phyſic: many reſemble a Text cruſhed under the weight of metaphyſical jargon: intereſting facts are buried under a confuſed heap of ſophiſtry and error; the writers raiſe a thick miſt about themſelves, and we have conſiderable difficulty to extricate plain truth, and practical remarks. To ſpeak in Medical language, the majority of publications in this ſcience are overdoſed with theory, even to diſguſt.

GOTHIC and imperfect as the ſtructure of Medicine may be thought at preſent, many thouſand different authors have exerted their labours in erecting it. Vander Linden and Merklin give a catalogue of their names to the beginning of the preſent century. Heiſter, who wrote about forty years ago, enumerates upwards of ſeven hundred ſurgical writers, whoſe works are diffuſed in more than one thouſand volumes, and many hundreds have ſince been added. Aſtruc's Liſt of Writers on the venereal diſeaſe, including ſyſtems and detached treatiſes, amounted thirty years ago to above *five hundred*; yet the diſeaſe was then known in Europe but 256 years. Haller, the late celebrated anatomiſt, collected into one univerſal catalogue, the names of medical and ſurgical writers, with the titles of their books and pamphlets: the whole magazine heaped together, notwithſtanding numerous omiſſions, exceeds *thirty thouſand*.

THIS profuſion of volumes is principally the progeny of the moderns. From the days of Hippocrates to about the year fifteen hundred of the Chriſtian era, and including a ſpace nearly of two thouſand years, we have not above a *ſcore* of medical and ſurgical authors, that at this day merit peruſal. The ſhort interval within the laſt three hundred years, or, which is the ſame, from the revival of literature in Europe, has teemed forth inundations of Medical writers. The life of one man, unleſs it was protracted to the age of the Antediluvians, would be too ſhort to explore, and his memory and intellects too limited to contain them.

When we compare the increaſe of Medical knowledge with the number and ſize of the Authors, the former appears inconceivably diminutive. Few of them contain any material diſcovery or uſeful improvement. The eſſence of groſs volumes might be contracted into a few lines. Numbers diſplay a manifeſt want of information or of veracity: others are filled with ſpeculative bombaſt, hackneyed remarks and quotations: their readers may be compared to an induſtrious bee, who patiently extracts a little honey amidſt heaps of weeds and thiſtles. Much fatigue, and the danger of loſing our eye-ſight, or of wearing ourſelves down to ſkin and bone by dint of inceſſant reading of books, may be conveniently retrenched. A prodigious crowd of writers merit no place in general hiſtory: their works no longer intereſt Medicine: they are, to uſe the expreſſion of an inimitable hiſtorian, (Voltaire) "Like the innu-
" merable herd of men who have paſſed in re-
" view upon the theatre of the earth, now decay-
" ed and forgotten, and no longer objects of at-
" tention. To read them would only encumber
" the head with a jumble of words, and burthen
" the memory to no uſeful purpoſe."

In drawing a ſhort ſketch of Medicine and Surgery through a revolution of ages and empires, all that I can take notice of amongſt this immenſe pile of books, are thoſe authors who have done ſome real ſervice to Medicine, either as Phyſicians, Anatomiſts, Surgeons, Botaniſts, Chymiſts, or Philoſophers; nor ſhall I let thoſe eſcape unnoticed, who have been inſtrumental in miſleading mankind, and in clogging the progreſs of Medicine to maturity. Mr. Le Clerc, in a large quarto Volume, finiſhed his journey in Arabia, and Dr. Friend travelled very li[illegible] further. I could not be contented to alight in Egyptian, Arabian, or Gothic deſerts: a compleat library of Medical writers three centuries ago, I knew, would at this day be extremely imperfect. It is a great defect in Boerhaaves "Methodus diſcendi "artem Medicam," that he did not purſue the regular chronological order in commenting upon the Authors, and that Writers one and two thouſand years ago are promiſcuouſly confounded with the Writers of the preſent century. In fact, without the general hiſtorical chart of human affairs, the hiſtory of Medicine and of Authors is a wilderneſs and chaos: we may be ſaid to ſail in a boundleſs ocean without a compaſs or quadrant.

CHAP. II.

The ORIGIN *of* MEDICINE *and* SURGERY.

THE infancy of Medicine reſembles that of moſt kingdoms; it is filled up with fable and conjecture, and reſts upon dubious traditions: we have few hiſtorical records to conduct us, and perhaps, after a tedious ſearch, certainty would add very little to the fund of Medical Science. I ſhall, notwithſtanding, briefly endeavour, ſo far as hiſtory or chronology direct the road, to trace Medicine back to its original ſources: this inquiry will conduce to order, to preſerve regularity in the ſeries of events, to anticipate digreſſions otherwiſe unavoidable, and leave no chaſm in Medical hiſtory. Arts, Sciences, and Medicine, are ſo cloſely connected with hiſtoric dates, with the riſe, fall, manners, and cultivation of different nations, that it is impoſſible to ſeparate them entirely: the origin, progreſs, and revolutions of Phyſick muſt otherwiſe appear myſterious and inexplicable. It would be reading hiſtory without globes or maps. I mean to touch as conciſely as poſſible upon thoſe ſubjects.

FROM nations the earlieſt civilized, we ſhould expect the firſt rudiments of Arts and Science. " Europe was covered with foreſts, and inhabited " by wandering ſavages, when extenſive empires, " populous cities, arts, luxury, and deſpotiſm " were eſtabliſhed in Aſia, and in the north-eaſt

" part of Africa, Egypt." Sacred hiſtory is ſolely confined to that portion of the Globe. To theſe antient countries we are originally indebted for many uſeful, and for many profitable branches of trade and manufactories. The oldeſt book we have is the Bible, and the moſt antient author, Moſes. According to this inſpired writer, the Earth, the Sun, the Planets, and the firſt human Pair were created about 2510, or 50 years before he led the Iſraelites into Stony Arabia, and delivered them from the oppreſſion of Pharaoh, King of Egypt. 1651 years after the creation, the deluge of the globe is ſaid to have happened. The Jewiſh hiſtory from Moſes is continued by ſeveral writers down to the Meſſiah's era, or 4000th year of the world.

CHINA, Egypt, and even India aſſert their pretenſions to an antiquity, which ſome may regard as chimerical and extravagant. The Chineſe appeal to celeſtial Arithmetic, to Eclipſes, to the motions and revolutions of the heavenly bodies, which are fixed and uniform, to prove the antiquity of their nation. If credit can be given to the original era of a book lately publiſhed in Engliſh, (a code of the Gentoo laws) and tranſlated from the Indoſtan language, the Egyptian Prophet might be thought to have borrowed a ſhare of his ſyſtem of juriſprudence from the Legiſlator of India, Brama.

All the authentic knowledge of Chronology, if we except India and China, is come down to us either from Scripture, or from the Greek authors: in theſe records we muſt ſeek for antient erudition and hiſtory. Homer, the Greek Poet, who lived five hundred years only after Moſes, ſings of proud Thebes, the miſtreſs of the Egyptian plain: the walls, columns, porticos, and extenſive edifices, now crumbling into duſt, prove the former opulence and ſplendor of this ancient city. The era or firſt foundation of thoſe ſtupenduous piles of building, the Pyramids of Egypt, of the catacombs, grottos, artificial lakes, labyrinths, and ſubterranean excavations, with many other vaſt monuments of magnificence, human labour and expence, were loſt when the firſt Greek Philoſophers travelled into that country. Lycurgus, Solon, Thales, and Pythagoras, had viſited Egypt five, ſix, and ſeven hundred years before Chriſt. Herodotus, a native of a Greek Colony in Leſſer Aſia, who lived about four hundred years after the poets, Heſiod and Homer, and a little before the invaſion of Greece by Xerxes, is the moſt ancient profane hiſtorian: Cicero ſtiles him the Father of Hiſtory. This venerable author, who had travelled through various nations to acquire information, and to collect materials for his hiſtory, aſſures us, that, in his days, the Egyptian Prieſts reckoned up three hundred and thirty Kings who had reigned over that nation, eighteen of whom were Ethiopians. Some of the

Temples, he informs us, were adorned with porticos and figures of excellent ſculpture. The Egyptians, continues this author, were the firſt inventors of the year, which they divided into twelve parts or months: they firſt gave names to, and invented the Genealogy of the Heathen Gods, which the Greeks adopted from them, together with many religious ceremonies: they were the firſt of mankind who affirmed the immortality of the ſoul, and the doctrine of its tranſmigration, three thouſand years after, through other animals. Their favourite ſtudies were Aſtronomy, Aſtrology, Magic, and the Divination of future events. "More prodigies, he adds, abound in Egypt, than in all the reſt of the world, and they are beyond meaſure ſuperſtitious in all things regarding religion."

GREECE, the firſt enlightened nation of Europe, or rather confederacy of little ſtates, acknowledges to have received the rudiments of arts and knowledge from Aſia, and from Egypt. Before the ſiege of Troy, (A. C. 882 years) we find Greece enſlaved by a number of petty tyrants, dignified with the appellation of Kings. Fifty years prior to this memorable ſiege, Eſculapius, the Greek, is ſaid to have been deified, on account of his Medical ſkill, and Temples were built to his memory, where he was worſhipped as a Divinity. In many of thoſe temples, at Pergamus, in the iſland of Cos, and in many villages of Greece, diſeaſes and cures were regiſtered and engraved upon marble tables, or ſtones, hung up for the benefit and inſtruction of others who might ſtand in need of Medical aid. The Prieſts and Prieſteſſes, the guardians of the Temples, and who prepared the Medicines, converted the worſhip into a lucrative trade, and we have good reaſon to ſuſpect, acted in ſeveral inſtances like the intereſted proprietors of modern Medicinal ſprings: they invented ſome falſhoods, and forged cures, to increaſe the renown of the Oracle. Numbers indiſpoſed travelled from diſtant kingdoms to conſult the Greek Oracle, and endeavoured to conciliate his favour by liberal preſents: there are inſtances many centuries after of Roman Emperors, when afflicted with diſeaſe, making a journey to Pergamus for that expreſs purpoſe. Moſt of the important tranſactions of mankind in early periods in Aſia, in Egypt, in Greece, and in Italy, were regulated by Oracles.

Podalirius and Machaon, two ſons of Eſculapius, and petty Kings of Greece, accompanied Agamemnon to Troy. Homer ſpeaks of them merely as Surgeons dextrous in healing wounds and extracting darts; for in the great peſtilential ſickneſs and mortality which invaded the Grecian army, there is no mention of their being conſulted. Epidemical diſeaſes, and every other diſeaſe, the cauſe of which did not immediately ſtrike their rude ſenſes, were, in thoſe days of philoſophical ignorance, attributed not to natural cauſes, but to the immediate wrath of Heaven: their only remedies in ſuch diſtreſs, were prayers, ſacrifices, incantations, magic, and prieſt-craft: this was at leaſt an eaſy and ſhort method to account for and to deprecate natural phænomena, and was well adapted to vulgar capacities. Diſeaſes were believed to be hurled down upon the heads of guilty mortals, and to ſpring from the reſentment of ſome inviſible demon: ſuch fears urged trembling wretches to adopt ſuperſtition as a Medical remedy.

Medicine, until the era of the Greek Philoſophers, is a barren deſart. Greece then dethroned moſt of her little deſpots, and governments more favourable to the people and to ſcience were formed. The Spartan government was erected from the model of Lycurgus, ſeven hundred years before the Chriſtian epoch; and Athens, a century after Sparta, upon that of Solon, a man of great eloquence, and an eminent poet. Under the popular form of government inſtituted by him, the Athenians became polite, ſociable, and humane: Arts, Eloquence, Poetry, Sculpture, Mathematics, and other liberal ſtudies, were by them carried to great perfection. Sparta, on the other hand, was formed for the ſole purpoſe of war: the laws of Lycurgus were ſullen, ſevere, and tinctured with brutal ſavageneſs.

Macedon, before the time of Philip and his ſon Alexander, had been conſidered by the Greeks as half barbarous: they were ruſtic borderers, and a warlike people, not yet poſſeſſed of the Athenian graces and ſcientific accompliſhments.—During the three centuries before Alexander's ſhort reign (A. C. 356) we find that almoſt all the accompliſhed Philoſophers, Mathematicians, Generals, Orators, Theatrical Writers, Hiſtorians, Sculptors, Painters and Architects of Greece, together with the Phyſician Hippocrates, flouriſhed. The brighteſt epoch of the arts and ſciences in Greece was a ſhort time preceding Philip and his ſon, and during their lives.

From all that rich portion of Aſia, now trembling under the iron ſceptres of Turks and Perſians, and once the ſeat of powerful monarchies and abſolute deſpots of the Aſſyrians, Babylonians, Medes, and Perſians, and afterwards of Alexander and the Macedonians, Phyſick, in its infancy, receives not the fainteſt glimmerings of light. The Chaldeans or Prieſts of Babylon, we are told by Herodotus, had the reputation of celebrated Aſtronomers, but the Babylonians made no uſe of Phyſicians: their ſick were carried out to public roads, markets, and frequented places: travellers on that road converſed with them, and acquainted them of any remedies they had ſeen uſed in ſimilar complaints with ſucceſs, either upon themſelves or their neighbours. To paſs ſilently by the ſick, without enquiring into the nature of his diſtemper, was there thought a crime.

Italy aroſe in ſucceſſion to Greece and Sicily, from which it is ſeparated by a narrow channel of ſea, the ſecond civilized nation of Europe. The Roman hiſtory goes no farther back than to Æneas, who, after the conflagration of Troy, is reported to have arrived there with his remnant of Trojans. At Alexander's death the city of Rome had ſtood under the regal government, and under Conſuls and Dictators four hundred years. In that period the Romans can boaſt of many eminent Generals, reſpectable Senators, and even a few Orators, if their ſpeeches have not been fabricated by the hiſtorian, but of no writer in any one learned ſcience. When we regard their literary talents we ſhall find, that from the rape of the Sabine virgins, during nearly five centuries, that fierce nation had conſidered war as one of the principal ſenſual and mental delights.

Carthage, the oppoſite African neighbour to Italy, had been built 137 years before Rome: about Alexander's death, Carthage was miſtreſs of the Mediterranean ſeas, a rich, commercial, and warlike republick. Tyre, her parent, boaſted to have taught the art of navigation, and for ages had been the moſt celebrated mart of commerce, until the mad ambition of one man, Alexander, laid this induſtrious little ſtate in irrecoverable ruins.

Having now attempted to adjuſt early chronology, and to point out the countries from which alone the ſeeds of learning and arts in thoſe remote periods can be collected, I am next to direct my inquiries to Medicine in its embryo ſtate.—Ancient Medicine, like all early tranſactions of mankind, is a mixture of monſters, giants, demigods and fables. This muſt be my excuſe for paſſing ſilently over the traditionally phyſical ſkill of Hermes, Bacchus, Apollo, Hercules and Chiron the Centaur: ſuch ſubjects fall properly within the province of the Antiquarian, and to them I reſign the irkſome toil of ranſacking the legends and dark archives of antiquity.

From the ſacred writings our profeſſion derives very little information. The regulations and precautions of Moſes to prevent the ſpreading of that loathſome and infectious diſeaſe, the Leproſy, which ſtigmatized the Egyptians and Iſraelites, are familiar to all Chriſtians. The principal precautions conſiſted in confining the unclean, and in purifying the defiled houſe and garments. Religion was called in to enforce the medicinal ordinances, and to render cleanlineſs a ſacred and moral duty. Herodotus remarks that the Egyptians, eſpecially the Prieſts, were uncommonly cleanly; that probably circumciſion, which the Egyptians and Ethiopians have practiſed time immemorial, originated from ſimilar motives. When Herodotus made the tour of Egypt, every Phyſician applied himſelf to the cure of a ſingle diſeaſe only, by which means Phyſicians abounded every where; ſome profeſſing the cure of the eyes, ſome of the head, and teeth, ſome of external, and others of internal diſorders. Veneſection was with them a familiar and frequent remedy: blood alſo was drawn by arteriotomy, by ſcarification and cupping glaſſes. In the delirium of Fevers, the legs of the ſick perſon were bathed in warm water, and ſcarified ſo as to draw away a large quantity of blood. In obſtinate head-achs, and opthalmias, and in the epilepſy, vertigo and apoplexy, they burnt the temples and back part of the head with lint or mox: in pulmonary Conſumptions they burnt ulcers in the breaſt; and in pains of the joints, or in the gout, they burnt over the affected part.--The lint was rolled into the form of a ſmall cone or pyramid, the baſe of which being placed on the ſkin, and the top kindled burnt down into the fleſh. Another ſingular cuſtom of the Egyptians was to purge themſelves every month, three days in ſucceſſion by vomits and clyſters, from a ſuppoſition that all diſtempers originated with the food, and were admitted by the mouth.

The Perſian monarchs, we may gather from Herodotus, entertained Egyptians as their Phyſicians and Surgeons. Cyrus, the cotemporary of Solon and Crœſus, and who united Medea, Lydia, Babylon, and Perſia into one immenſe monarchy, when afflicted with a diſorder of his eyes, he ſent a meſſenger to Amaſis, then king of Egypt, to requeſt one of the beſt Phyſicians for that diſeaſe. Darius, ſucceſſor to the ſon of Cyrus, Cambyſes, by an accident had diſlocated his ancle: the *Egyptian* Phyſicians who attended him, pulled violently and increaſed his pain, ſo that, during ſeven days and nights, he lay without ſleep: in this ſituation, a Greek Phyſician, by name Democedes, who had been taken priſoner in the war between the Greeks and Perſians, and was now, according to the barbarous cuſtoms of the times, in fetters, undertook and ſpeedily accompliſhed the monarch's cure. Darius, upon his recovery, preſented Democedes with a handſome houſe, and an immenſe ſum of gold, he became his principal favourite, and was familiarly admitted to the King's table.

Herodotus deſcribes ſeveral extraordinary ancient cuſtoms of the Perſians, Eaſt Indians and Scythians in ſickneſs. In Perſia, whoever was afflicted with the Leproſy, they concluded he had committed ſome great offence againſt the ſun, and if a ſtranger he was expelled from the country. "In ſome nations of the extenſive country of India," ſays he, "when any of the community is ſick, his beſt friends diſpatch him preſently; becauſe they alledge he is in a waſting condition, and diſeaſe will corrupt his body: if he denies that he is ſick, they have no regard to his words, but kill him, and eat his fleſh: a woman is treated in the ſame manner by the women. Other Indians obſerve a quite contrary cuſtom: they never kill any animal, but live on vegetable diet: when any of them is ſick, he retires into a deſert, where no care is taken of him whether he lives or dies." The former character of Anthropophagi, I apprehend,

prehend, many will conſider amongſt what Mr. Voltaire calls printed lies. The Scythians were an illiterate but powerful nation of ſavages, and abounded with Prophets. When the King of Scythia, continues Herodotus, is ſick, all the famous Prophets are ſent for, and they generally tell their noble patient that ſome Scythian, whom they name, has perjured himſelf in ſwearing falſely by the Royal Throne (the uſual ſolemn oath of the country) and that this has brought the diſtemper upon the King. The ſuppoſed criminal is then inſtantly apprehended, and, if he denies the fact, double the number of Prophets are called in; ſhould they confirm the former judgment, the poor man loſes his head: but if they adjudge him innocent, more divines are ſummoned to the council; and a plurality of voices determines the diſpute, whether the Man, or the firſt Prophets who accuſed him, ſhall die? In the latter caſe, the Prophets are bundled together, thrown upon a cart, covered over with faggots, the horſes turned looſe, and in this way they are burnt.

MANY of the Egyptian Prieſts were a ſort of conjurors or wizards in phyſick, and dealt out ſpells to their credulous flocks. We read alſo in Scripture that Benhadad, King of Syria, ſent to conſult Eliſha the Prophet reſpecting the iſſue of his diſeaſe. Joſephus, the Jewiſh hiſtorian, mentions a man called Eleazar who expelled evil ſpirits by putting a conſecrated ring to the noſe, and repeating a few verſes compoſed and left for that purpoſe by King Solomon.

Physick in its infancy conſiſted of a few ſimple remedies, of ſome rude notions of ſurgery, and of a farrago of ſuperſtition, charms and magic. The word Abracadabra, Abracadbr, Abracadb, repeated thus until it terminated in the ſingle letter A, was once a remedy in great repute: ſuperſtition and ignorance in caſes of recovery gave the whole merit to this ſilly trick, which was in reality due to nature alone, and in this way it became a faſhionable medicine—ſometimes this word in the conical form was engraved on ſtone or wood, and ſuſpended round the neck.

The neceſſities of men firſt prompted them to build houſes to procure ſhelter from the violence of winds and ſtorms, and likewiſe urged them, when afflicted with wounds, fractures, or other corporeal diſeaſes, to ſeek for ſome remedy. In the earlieſt ages wars, wounds, fractures and diſlocations happened; theſe accidents would require manual aſſiſtance, and give birth to ſurgery. The cure of many Surgical diſeaſes would occur almoſt ſpontaneouſly, and with very little exerciſe of judgment: bones fractured, or diſlocated, every one muſt be ſenſible, ſhould be reduced to their natural ſituation; a hemorrhage ſtopped, and darts extracted. In medical diſeaſes, ſtrictly ſo denominated, ſagacious men would ſee ſome recover from Fevers, for inſtance, and others die: they would perceive thoſe means which brought about a ſalutary or fatal criſis; what diet did good or injury; whether the criſis was preceded by vomiting, looſeneſs, ſweats, a flow of urine, a hemorrhage, by any natural evacuation, or critical eruption. They endeavoured afterwards, by art, to imitate thoſe ſalutary efforts of nature, and thus diet came to be regulated, Vomits, Clyſters, Purges, Sudorifics, and Veneſection, took their riſe. The death of ſome taught the cure of others, as ſhipwrecks are monitors to future navigators, to avoid the ſame danger. In this manner the cure of diſeaſes advanced with ſlow paces; by the experience and reciprocal advice of neighbours, by the curioſity of Philoſophers, by accidental diſcoveries, and by the ſagacity of profeſſional practitioners. A long ſeries of ages however elapſed before thoſe obſervations were collected and digeſted into a ſyſtem of Medical erudition, and before they were ſo multiplied, that it was neceſſary for one man to dedicate many years ſtudy and attention to this ſingle profeſſion.

Amongst ſeveral of the moſt ignorant tribes of Savages, ſome faint veſtiges may be pointed out of ingenuity, and even of Medical knowledge; ſuch at leaſt as their immediate and preſſing exigencies rendered neceſſary. When Columbus firſt penetrated into the Weſtern hemiſphere, the illiterate inhabitants of Hiſpaniola were poſſeſſed of a remedy againſt a dangerous diſeaſe, generated in their country, and affecting the ſprings of life:

they firſt taught the Europeans that Guiacum was their cure for the Venereal Diſeaſe. In South America, the Indians by accident found out the virtues of the Peruvian Bark in Remittant Fevers, which are epidemical in Tropical Climates; and from them the Jeſuits brought this invaluable Medicine to Europe. I could add more examples of this nature; but objects rather of curioſity muſt give way to thoſe of utility.

CHAP. III.

Of GREEK WRITERS: MEDICINE *and* SURGERY *in Greece, and at Alexandria, in Egypt.*

FEW books probably were written upon Medicine prior to the philoſophic age of Greece: at firſt it ſeems a farrago of ſuperſtition and rude empiriciſm: conſiſting of few obſervations, the whole could eaſily be retained in the memory: in many caſes, neighbours aſſiſted each other with their advice, and in general, as a ſeparate profeſſion, it was monopolized by one family, and taught to their ſons and grandſons, as we now teach handicraft trades: this was the education of Eſculapius's family, from whom, in a long lineal genealogy, Hippocrates is ſaid to have deſcended. We are aſſured, that the Medical profeſſion had continued for ſeveral centuries without interruption hereditary in the Eſculapian line. In Indoſtan, a ſimilar cuſtom has prevailed almoſt time immemorial: there all trades and profeſſions, by the original inſtitutions of Brama, have continued ſeparate and diſtinct in the ſame families or tribes upwards of three thouſand years. The Bramins are at this day the Prieſts and Phyſicians of India. Amongſt the ancient Perſians, the inhabitants were divided into tribes: the Oriental Magi were the Prieſts, Politicians, and Philoſophers of Perſia; and thus arrayed their own reverend perſons with triple importance. The ancient Egyptians too were ſeparated into orders; profeſſions and trades deſcending by inheritance in the ſame families.

Most of the early ſages of Greece, Thales, Pythagoras, and Empedocles, the Sicilian, ſtudied Medicine, as we are informed by Celſus, but not as practical Phyſicians: they were endeavouring to inveſtigate the primary elements of all bodies, and the ſtructure of man, partly as a curious object of phyſicks; at the ſame time inceſſant ſtudy and contemplation had injured their conſtitution; and they were in hopes to make medical inquiries ſubſervient to the preſervation of their health.

The Gymnaſtic medicine of which Herodicus was the founder, firſt attracts our attention. Games and ſports had been early inſtituted in the Greek ſtates, where youth were exerciſed for war, in order to increaſe their vigour and ſtrength, qualities then ſo important in deciding battles. The whole ſcope of the Lacedemonian education was calculated to render the inhabitants robuſt and martial. With this view the mothers plunged their new-born infants into wine. Lycurgus ordered all weakly and deformed infants to be expoſed to periſh in caverns. This Legiſlator was not leſs anxious to improve the breed of men and women, than the Arabians and Engliſh are to improve the breed of their horſes. Gymnaſtic exerciſes were cheriſhed and practiſed with peculiar zeal by the Greeks. They had religious, military, athletic, and laſtly medical gymnaſtics particularly adapted to the prevention or removal of diſeaſes. Herodicus, the maſter of one of their academies, where youth were taught various military exerciſes,

ciſes, obſerving its good effects in ſtrengthening the body and preſerving it in ſound vigour, commenced Phyſician: his only panacea, which, unfortunately, he adminiſtered at random in every diſeaſe, Fevers not excepted, was exerciſe, frictions and baths; but his rules in the adminiſtration of thoſe remedies have not reached us. Such medical auxiliaries, however ſimple in appearance, we muſt allow, are not only extremely conducive to health, but alſo to remove ſeveral chronic diſeaſes, had they not been applied indiſcriminately, and their virtues, as is the caſe with moſt remedies on their firſt introduction, extravagantly magnified. Academies for exerciſe were from that time erected in all the towns of Greece, with baths and other conveniences for frictions and unctions of the body. Rome ſeveral centuries after, in imitation of her miſtreſs in ſcience and arts, erected ſumptuous gymnaſiæ, venerable monuments of which remain to this day, and give us a high idea of their primitive coſt and magnificence.

To this gymnaſtic empiric ſucceeded Hippocrates, upon whom poſterity, with unanimous ſuffrage, have conferred the appellation of the Father of Medicine. He was born in a ſmall Grecian Iſland of the Archipelago, called Cos, had ſtudied Phyſic under his father, and, we are told, under Herodicus alſo, and died, at an old age, 360 years before the birth of Chriſt. Hippocrates made the firſt ſucceſsful attempts to ſeparate the medical profeſſion from raſh empiriciſm, and from the frivolous dreams of the Philoſophers, to eſtabliſh it upon a rational foundation, and to render it beneficial to mankind. From his works indeed we learn, that Phyſicians lived long before him in Greece, Fevers had been diſtinguiſhed into their different genera, and he ſpeaks of medical conſultations: his predeceſſors however had made very inconſiderable progreſs in Medicine, and it became neceſſary for him to begin almoſt from the foundations.

Hippocrates compares the human body to a circle, no part can be called the beginning nor end: this reaſoning he applies to diſeaſes, where the derangement of one function involves many others in diſorder. The head is affected by diſorders of the ſtomach, and, "vice verſa;" the ſkin and extreme parts are governed by the ſame ſympathy, and communicate their ſufferings back again to the internal organs.

He examines the effects of the air, whether cold, hot, dry, or moiſt; of the winds, blowing from different points; the effects of different regions and habitations of men; of the different ſeaſons of the year, of the Solſtices, Equinoxes, the riſing and ſetting of Stars, and their reſpective influence upon the human body. He compares the ſeaſons with reſpect to health, and remarks what diſeaſes are moſt prevalent during each ſeaſon. In one chapter he gives a ſketch or annual journal of the weather and ſeaſons, and the predominant diſeaſes. He examines the effects upon the conſtitution of ſleep and watching, of hunger and thirſt, of exerciſe and indolence, of the excretions and retentions, and of the

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paſſions of mind, and lays down precepts for their regulation. He is very minute in determining the nature and qualities of different foods; of fleſh, and of fiſh taken from freſh and ſalt waters, of fowls and the feathered tribe, of vegetables and fruits, of wines and waters. Under the article of fleſh meat we find that of dogs, horſes, and aſſes; from which many have been led to ſuppoſe that theſe made a part of the Grecian diet. Herodotus, in his narration of the cuſtoms and diet of the Perſians, ſays, "That oxen, camels, horſes, and aſſes, were annually roaſted entire in rich men's houſes upon their birth-day."

HIPPOCRATES enquires into the nature of the diſeaſes to which different periods of life are moſt ſubject, comprehending Infancy, Puberty, Manhood and Old-Age. He cannot be ſaid to have claſſed diſeaſes in any regular noſological order: he makes a few diſtinctions only of diſeaſes, as affecting different humours, and different parts of the body, and of Acute, Chronic, Endemic, Epidemic, Hereditary, Malignant, Female and Surgical diſeaſes, &c. The Acute diſeaſes he pronounced the moſt fatal to mankind. He attributed the moſt general cauſes of Epidemical Fevers to certain impurities and changes in the air which affect men, however different their food and manner of life. He ridiculed the ſuperſtitious notions of diſeaſes originating from the divine diſpleaſure, and the practice, then in uſe, of magical incantations in the cure of the Epilepſy. Very few diſeaſes, then known, whether medical or ſurgical, have eſcaped his notice and diſcrimination; a bare catalogue of their names occupies ten quarto pages in Le Clerc's Hiſtory of Medicine.

The great eclat of Hippocrates's reputation aroſe from his predicting the criſes, termination and event of diſeaſes. The Chapters called Prognoſtics, Predictions, Coacæ Prænotiones, and Aphoriſms, contain the eſſence of thoſe admirable rules; in which are united an accuracy of obſervation, a rigid ſagacity of judgment, that to this day ſtand unſhaken and unrivalled. To form ſure predictions, Hippocrates directs to attend to the ſeaſons, to the nature of the diſeaſe, and to every circumſtance about the ſick: he attended particularly to the reſpiration, but the pulſe he conſidered, for many reaſons, a doubtful criterion, and ſeldom adverts to that ſign. In moſt diſeaſes, but eſpecially in Fevers, he regarded, with ſcrupulous exactneſs, the countenance, eyes, voice, ſpeech, geſtures, the excretions by ſtool, by urine, by ſweat, by vomiting, and by ſpittle, the reſpiration, the ſleep and watching, the appetite and thirſt, the weakneſs, ſtrength, ſpirits, the tongue, the external and internal ſenſes, the manner of lying in bed, and every action of the ſick perſon, and laſtly, the critical days. From all thoſe ſigns, weighed together and compared, from conſtant habit, and ſeldom interrupting the proceſs of nature, in febrile caſes, by internal Medicines, Hippocrates was enabled to predict the duration, criſis, event, and various terminations of diſeaſes, with prophetic preciſion. He alledged, that certain diſeaſes might be portended by a perſon's dreams.

HIPPOCRATES believed, that moſt febrile diſeaſes were cured by ſome evacuation, either by ſtool, urine, or ſweat, or by the mouth, and that a criſis enſued on particular days in preference to others. The critical days in Fevers, reckoning from the firſt attack, were the fourth, ſeventh, ninth, eleventh, fourteenth, ſeventeenth, and twentieth: here, it is evident, are both even and odd numbers. Criſes, which occurred upon any other days, he held to be imperfect, and the ſick ſubject to relapſe. Of all the numbers, ſeven was thought the moſt powerful, and was called the harmonic number, a doctrine firſt ſuggeſted by Pythagoras. Hippocrates, celebrating the powers of the number ſeven, ſays, "Per ſeptem figuras cognitio habetur, ſenſatio homini contingit, auditione ſoni percipiuntur, viſione manifeſta cernuntur, naſus odores, lingua ſuavia et inſuavia diſcernit, os ſermonem format, corpore calidi et frigidi tactus percipitur, ſpiritus intro et foras permeat, et per hæc hominibus cognitio contingit." We know there are juſt ſeven fundamental tones in Muſick, and ſeven original colours, or rays of light, which without the aſſiſtance of priſms, the Greeks might have perceived in the rainbow. The Ancients were not ignorant of the Muſical Scale, though it is agreed, they were unacquainted with the modern enharmonic ſyſtem: nor before the days of Newton, had the latter doctrine of the ſeven viſual rays been demonſtrated. The Greeks imagined, that the primordial colours reſided in the objects themſelves, and were inherent in the four elements.

HIPPOCRATES drew blood by the lancet, and by ſcarification and cupping-glaſſes. His vomits and purgatives, unleſs adminiſtered in very ſmall doſes, were extremely rough and violent, ſuch as the White and Black Hellebore, Elaterium, Scammony and Colocynth. Aſſes milk and ſalt mixed was a mild laxative uſed by him, together with Clyſters and Suppoſitories. To eaſe pain and procure ſleep he ſometimes adminiſtered the juice of Poppy, or the Meconium. His internal preſcriptions conſiſt of few ingredients. Le Clerc has enumerated, in alphabetical order, the intire Pharmocopeia of Hippocrates: the whole catalogue of medical ſimples amounts to a very inconſiderable number. He and all the ancient Phyſicians are ſcrupulouſly minute in the Dietetic part of Medicine, and in regulating the proper time for adminiſtering food and drink to ſick perſons. In every caſe, whether in health or in diſeaſe, both in diet and drink, he made allowances for cuſtom and habit, and for the difference of climates. To maintain ſound health he diſcouraged too exact and methodical a regimen.

VERY few internal remedies were preſcribed by Hippocrates in Fevers; his practice in them is exceedingly ſimple: he intermeddled with extreme caution, fearful of interrupting the progreſs of nature, whilſt the humours were crude, not thoroughly

roughly concocted, and prepared for expulſion. When this proceſs was finiſhed, he ſuppoſed that nature attempted, by ſome evacuation or criſis, to eject the offending matter. The modern diſcovery of Antimonials and Bark have, in a conſiderable degree, overturned this ancient Theory, and the timid errors of ſuch practice. In continued and Remittent Fevers he ſeems to have been a ſpectator, and to have ſat at the bed-ſide, regiſtering good and bad ſymptoms, truſting all to the efforts of nature, and from her ſtruggles prognoſticating the event. This gave occaſion to the ſarcaſm of Aſclepiades, who lived ſome centuries after at Rome, and who compared Hippocrates's practice to a meditation on death. His principal remedies in the above genera of Fevers conſiſted in regulating the diet and drink. During the acceſſion of a paroxiſm or cold fit, all food was withheld, until a general diffuſion of heat to the extremities enſued. Barley, or other grain, boiled with water, were given as ptiſans, and honey, vinegar, and water, or often an infuſion of various herbs: theſe meagre diluents ſerved principally for food and drink: in ſummer, if nothing prevented, they were given cold. If the ſick perſon was low and weak, wine was conſtantly preſcribed as the moſt invigorating cordial. He generally recommended a clyſter to unload the inteſtines. A number of caſes in Epidemical Fevers, are preſerved amongſt his works, and in the examples there exhibited nature appears to have been too often an unſuc-

ceſsful

l Phyſician. In ſeveral genera of Fevers
commended a warm bath at the beginning,
waſh the body with warm water. In Quartan
rs he preſcribed Sternutatories, Vomits, Purges,
m-Baths, Sweating, and ſome internal reme-

internal topical Inflammations, he bled more
ſs according to the violence of the diſeaſe and
e pain, and of the age, ſtrength, and vigour
e patient. In the Pleuriſy he alſo applied to
pained ſide ſalt warmed in a woolen bag, and
times a bladder filled with warm water, or a
ge wrung out of hot water. In the Perip-
nony or Inflammation of the Lungs he re-
nended a warm bath, and diluting watery in-
ns to be gradually drank or ſipped, and ſuch
ould promote expectoration and urine: the
ions of ſeveral plants, mixed with honey and
gar, were well calculated for this purpoſe.
utility of the warm bath he ſays is to ſoften
kin and joints, to promote urine, and to open
xcretery paſſages, to refreſh, and to diſſipate
ineſs of the head. In ſome ſpecies of Pulmo-
Conſumptions he preſcribed a vomit, ſome pec-
infuſions and fumigations, and ſometimes ſter-
ories; birds and ſoft cartilaginous fiſh were per-
d to be eaten: acrid food, ſurfeits and venery
avoided: moderate exerciſe by walking was
ned, but not in the heat of the ſun, nor in windy
her: in the laſt extremity, he burnt the cheſt and
in ſeveral places with a hot iron ſo as to keep
ulcers and a diſcharge.

If a collection of matter or Empyema in the breaſt ſucceeded a Pleuriſy, Peripneumony, or Conſumption, he pulled out the tongue, then forced a liquid down the throat ſo as to excite a Cough and burſt the Abſceſs: when this failed, he ventured to make an opening in the ſide to give the matter a diſcharge: in this complaint he alſo adminiſtered Sternutatories. In the Angina he bled in the arm, and if neceſſary under the tongue, gave a clyſter, ordered warm ſteam and fumigations to be inhaled by the mouth and noſe, and warm gargles to relax and to promote the flow of Saliva. In the Ileus, or Inflammation of the bowels, accompanied with obſtinate conſtipation, he bled, (and what is juſtly condemned, vomited) placed the patient in a warm bath, the belly and lower parts were kept warm and anointed with warm oil, Clyſters were given, ſometimes air was blown into the anus, and immediately after a Clyſter injected; Suppoſitories alſo were introduced.

In one ſpecies of chronic Head-ach, he directed fomentations to the head, and Sternutatories of the juice of certain plants, or of hellebore, and if the diſeaſe ſtill proved obſtinate, he opened the veins either in the temples or forehead, or burnt thoſe parts, or the nape of the neck with a hot iron. In watery defluxions of the eyes, the iron was applied to the ſame parts as in head-achs. *Herodotus* relates, that in Egypt the mothers burnt the temples of their children with greaſy ſheeps wool to cure ocular defluxions. In the Tetanus and Locked Jaw he anointed the body frequently with warm oil, and adminiſtered Sternutatories. The recent Gout in young men he thought might, by regimen in diet, and by exerciſe, be prevented: if of long ſtanding, and in old men, he thought a radical cure impracticable. In the Gout, Sciatica and fixed Chronic pains, he made frequent uſe of the hot iron, or burnt an ulcer with lint or mox over the ſeat of the pain: this is an ancient practice familiar in India, China and Japan. In Dropſies he purged, preſcribed in food diuretick vegetables, ſolid diet, little drink, and much exerciſe. Amongſt the diureticks he mentions onions, garlick, leeks, ſelery, parſley, cucumbers, melons, fennel, honey, ſweet wine: in ſome caſes he gave a violent and dangerous diuretic, cantharides. If the diſeaſe continued rebellious, and the water was lodged in the external cellular membrane, punctures were made in the ſkin, if in the Abdomen or in the breaſt they were tapped. In Ulcers of the kidneys, during the fit of pain, he ordered the warm bath, and fomentations to the external region of the loins, gave ſweet wine diluted, and for common drink milk and whey. In a nephritic paroxiſm, where ſand or ſmall ſtones were lodged in the kidneys or urinary paſſages, he likewiſe ordered the warm bath. In one ſpecies of Jaundice he preſcribed the warm bath, a purgative, and diuretic vegetables in food, wine, &c.

He deſcribes various diſeaſes of the liver and ſpleen, and the different methods of cure to be purſued in each genus.

HIPPOCRATES dwells upon female diſeaſes with unuſual prolixity: he conſidered the Uterus as the cauſe of all the complaints peculiar to the fair ſex. He deſcribes the Obſtructio and Profluvium Menſium, and various ſpecies of the Fluor Albus, the Cancer of the Uterus, the Procidentia Uteri, the Hyſteria, &c. In immoderate menſtruation he directed aſtringent Peſſaries to be introduced into the Vagina, cupping glaſſes to be applied to the breaſts, to lay in bed with the feet elevated, to uſe as little motion as poſſible, ſpunges dipped in coldwater to be frequentlyapplied to the lower part of the Abdomen, and to the private parts. In the Hyſterical paroxiſm he ordered a tight bandage to be rolled round the belly, fetid ſubſtances to be held to the noſe, ſometimes he excited ſneezing, and in the intervals gave caſtor internally. Fumigations and warm vapours from various ingredients were conveyed through a funnel into the Vagina, both in Hyſteria and in female obſtructions, and in both diſeaſes Peſſaries were introduced: but the moſt effectual remedy, in Hippocrates's opinion, was to indulge the intentions of nature and to light the torch of Hymen. A prodigious liſt of ingredients uſed in the compoſition of Peſſaries, of injections, and of fumigations for the Vagina and Uterus, and alſo a variety of internal potions and mixtures for theſe different

diſeaſes

female diseaſes may be found in this Author. He aſſigns ſeveral cauſes, and preſcribes ſeveral remedies for Sterility, and for Abortion. He deſcribes the ſymptoms of true and falſe conception. To promote delivery, if languid; and where the fetus preſented in the natural poſition, that is with the head foremoſt, he directed ſternutatories, and violent concuſſion of the woman during the pains of labour. When the arm, leg, or breech preſented, he returned them back, and endeavoured to turn the fetus ſo as to preſent the head, which is the reverſe of the modern practice. He extracted the dead fetus, in difficult labours, by a crooked hook or crotchet, and ſometimes in fragments. During the pains of labour, he applied fomentations to the private parts. In Inflammation of the Uterus, after delivery, he ordered fomentations, cataplaſms, ſometimes a warm bath, low diet, &c. and in ſudden ſuppreſſion of the Lochical diſcharge, purgatives, or clyſters, fomentations, warm baths, &c.

The moſt valuable and laboured part of Hippocrates's Surgery, is that relating to Fractures, Luxations, Ulcers, and Fiſtulas; it is indeed the baſis, at this day, of modern Surgical practice, in ſuch accidents and diſeaſes. He directs the extenſion, the reduction, the bandages, and the ſplints proper in Fractures and Luxations of different bones, and of whatever ſpecies, or nature, and ſeveral inventions and machines, to increaſe the extenſion, when neceſſary; he directs the laxity and tightneſs of the bandages, the intervals for unlooſing and binding them on again, the poſition and repoſe of the fractured member, the regimen and diet, and mentions the time when a callus is uſually formed. The uſeful parts of his directions in fractures of the Scull, and the application of the trepan, and in Ulcers and Fiſtulas, are copied by Celſus: to prevent repetitions, I muſt refer the reader to turn over to that Author, where I ſhall likewiſe take notice of a few of Hippocrates's emollient and diſcutient cataplaſms and ointments. Amongſt his Eſcharotics to foul Ulcers and fungous fleſh, we find Alum, Nitre, Verdigreaſe, and Quicklime, and a profuſion of external applications and compoſitions.

We are now approaching to parts of this great man's works, many of which will not ſuſtain a ſevere critical ſcrutiny. His Theory of the Proximate Cauſes of Diſeaſes is perplexed and bewildered in mixtures of four ſuppoſitious primary humours, blood, pituita, yellow bile, black bile, or melancholy. Human bodies were conjectured to be made up of thoſe four elements, and diſeaſes to depend on their degeneracy, diſproportion, or improper mixture, eſpecially the two biles. Their qualities were ſaid to be heat, cold, moiſture, and dryneſs. The doctrine of four primary elements, fire, air, earth, and water conſtituting all bodies in nature, had been originally broached and maintained by Thales and by Pythagoras.

Modern Anatomiſts cannot avoid pronouncing the Anatomy of Hippocrates to be groſs and imperfect. Human bodies had not then been diſſected, and his knowledge upon this ſubject (except perhaps the Oſteology) was acquired by opening animals of the brute creation; ſome of whom, as the Ape and Monkey in their internal ſtructure, bear a ſtrong reſemblance to man. Notwithſtanding ſuch radical impediments to obtain correct Anatomical ideas, he has given a coarſe ſuperficial deſcription of the Lungs, Heart, Stomach, Liver, Spleen. Kidnies, Ureters and Bladder, and of the large trunks of the Blood-veſſels. The Oſteology excels every other part of his Anatomy. He ſays nothing more of the Muſcles than that they are inſtruments of motion. He knew that the brain was the primary ſpring of motion and ſenſation: the blood too he knew nouriſhed the body, and he imagined was the ſource of heat; but he was totally unacquainted with the rotatory circulation of that fluid. He ſaid that the rudiments of male and female embryos were contained in the ſemen of both ſexes.

Hippocrates's language in general is uncommonly conciſe, and from that cauſe often obſcure: it is far inferior in compoſition or elegance to ſome of his predeceſſors, or to many who ſucceeded him. There are contradictions and flimſy remarks, beſides a confuſed medley of ſeveral diſeaſes, unknown to and undeſcribed by poſterity, which gives room to believe, that additions and alterations have been made after his death, and that ſome parts are ſpurious. In many places, we muſt confeſs, he teems with uſeful maxims and in-

formation.

formation. In attending to diſeaſes, throughout all their changes and meanders, he was vigilant and indefatigable, his judgment profound and correct. His concluſions and predictions are, notwithſtanding, often built upon a ſingle ſymptom; but to preſage future events, in conformity to his own rules, a more comprehenſive ſurvey ſhould be made of the diſeaſe, the remaining powers of the conſtitution, and the probable ſucceſs to be expected from Medicine. His Aphoriſms begin in the uſual ſtile, of which I before gave a ſpecimen. "Vita brevis, Ars longa, occaſio preceps, "experientia fallax, judicium difficile," &c. The Latin is put in place of the original Greek, which is ſtill more compendious, and the diction adorned with greater majeſty. Throughout, his language is cloſe and compreſſed; and on moſt ſubjects he is defective in arrangement, perſpicuity, and elucidation. To beginners in Medical Studies he would be dry and frequently unintelligible. His writings reſemble rather a regiſter or a ſtore-houſe of ſolid facts heaped together, than a pleaſing narrative. He may, I think, be compared to our Bacon, Lord Verulam: the one is in Phyſick what the other, in modern times, was in Philoſophy. Hippocrates firſt pointed out the true road to arrive at Medical knowledge, and made a beginning in almoſt every branch of Medicine, although he brought none to perfection. In ſo ſhort a time he did wonders for one man: but the fabric of Phyſick was infinitely too large and extenſive for a ſingle perſon to finiſh.

Hippocrates has the immortal honour of having furniſhed the firſt model, which others in the courſe of ſucceſſive ages have imitated and greatly ſurpaſſed.

Hippocrates deſcribes the duty and office of a Phyſician, and lays down rules for his deportment and manners. He practiſed in every ſphere of healing, he acted occaſionally as Phyſician, Surgeon, Apothecary, Acocheur, and even as a Nurſe: it appears too, that he travelled through moſt of the Greek towns in the exerciſe of his profeſſion. Athens decreed him a golden crown, and ſumptuous preſents, on account of ſome eminent ſervice done to that State, when invaded by a peſtilential diſeaſe. Artaxerxes, an Aſiatic monarch, ſollicited him in preſſing terms, and by offers of princely rewards, to pay a viſit to his camp, and to direct him how to ſtop a contagious ſickneſs, which preyed upon his army. Hippocrates, we are told, rejected his offers, becauſe he was the enemy of Greece. Their epiſtolary correſpondence, the authenticity of which has been doubted, is inſerted in the works of that venerable patriarch of Medicine.

Democritus, the intimate friend of Hippocrates, had travelled for information into Egypt, Perſia, and part of India, and in his retirement afterwards performed a variety of experiments, and diſſections on brute animals. He alſo wrote on a vacuum, on gravity, and on the primary elements. An extreme recluſe mode of life, and the ſingularity of conſtantly laughing, a ſpecies, perhaps, of affected pedantry, made the Greeks for ſome time to conſider this eminent Philoſopher as a madman. Had mankind, however, in their future purſuit of knowledge, followed the example of Hippocrates and Democritus, inſtead of Plato and Ariſtotle, at this day they would have been much wiſer.

PLATO and Ariſtotle ſucceeded Hippocrates about fifty years. Thoſe two authors, if we may adopt the ſentiments of the learned Lord Bolingbroke, invented ſyſtems more baneful to truth and real learning, than the ravages of the Goths and Saracens. Plato turned Natural Philoſophy and the ſtudy of knowledge, into metaphyſical and chimerical ſubtleties; Ariſtotle into captious diſputation, logical quibbles, ſyllogiſms and ſcholaſtic jargon. Each of their ſyſtems were faſhionable, and flouriſhed not only in Greece, but continued to aſſert their empire in the ſchools of Rome, and through all the dark ages of Gothic, Arabian and Eccleſiaſtical barbarity; and were interwoven into the different ſyſtems of literature. They diverted mankind from purſuing the only certain road to knowledge, experiment and obſervation.

ARISTOTLE officiated as Preceptor to Alexander the Great, and, at the deſire of that monarch, compiled a ſyſtem of Natural Hiſtory. Hunters, fiſhermen and huſbandmen, throughout the extenſive regions of the Macedonian empire, were ordered to give their aſſiſtance in collecting materials for this work. It contains ſeveral chapters on the diſſection and ſtructure of various animals, fiſhes, birds and inſects; on the ſtructure, and uſes of their different organs; on their generation, parturition, food, habits, modes of life, and diſeaſes. This is the moſt antique model of Natural Hiſtory, that has ſurvived the ravages of time, (the Botanical part has not been ſo fortunate) and amongſt many errors, are interſperſed a variety of facts and excellent obſervations. His queries and problems reſpecting Medicine, and various other ſciences, were texts which likewiſe excited the curioſity and criticiſm of poſterity.

ANOTHER, and the moſt ancient Naturaliſt of the Botanical claſs, whoſe works have deſcended to us, is Theophraſtus, one of the diſciples of Ariſtotle. His obſervations, however, have very ſlender connection with medicine; they are principally directed to explain the ſtructure of plants and trees, their culture, propagation, growth, differences and diſeaſes; and in the whole, comprehend a few hundred only of the vegetable claſs.

SOME faint glimmerings of anatomical knowledge were now riſing to illuminate Medicine. Diocles, a phyſician, and the cotemporary of Plato, publiſhed written rules for the diſſection of animals. Human anatomy commenced a century later with Herophilus and Eraſiſtratus, the two Phyſicians on earlieſt record, who diſſected human bodies. One was born in the iſland of Cos, the latter was by birth a Carthaginian: both removed to Alexandria to practiſe their profeſſion, and to perform diſſections, under the immediate patronage and protections of the kings of Egypt. Alexander the Great, it is known, upon his conqueſt of Perſia and Egypt, founded the city of Alexandria, as the moſt central ſituation for trade in the whole world; connected by a narrow iſthmus of land to the Mediterranean and Red Sea, it was well adapted to become the great mart of merchandiſe between Europe and India. At Alexander's death, his extenſive empire became a prey to the ambitious men who had aſſiſted in his conqueſts, and the ſpoils were divided. Egypt afterwards, under thirteen Ptolemies and Cleopatra, ſubſiſted in ſplendor, as an independant ſtate, during three hundred and ſix years, when it fell under Auguſtus and the Roman yoke. Alexander's ſucceſſors on the Egyptian throne, were all Patrons of Letters and Arts: the ſecond Ptolemy had amaſſed two hundred thouſand volumes at Alexandria, and that celebrated library was increaſed in every ſucceeding reign by books, purchaſed at an immenſe expence from all parts of the world, where ſcience had made any progreſs. Alexandria continued many centuries after, the ſeat of Magnificence and Arts; a renowned School of Medicine, and eſpecially of Anatomy to both Greece and Rome.

We read in Authors, that it required the deſpotic authority of the Egyptian Kings to reſtrain the public indignation, and to protect the firſt human Anatomiſts; the practice was looked upon with abhorrence, and condemned as a heinous impiety: from hence probably aroſe the report, handed down to poſterity, and retailed by both Celſus and Tertullian, that Eraſiſtratus and Herophilus had diſſected criminals alive. Popular prejudice and the novelty of the enterprize might lead men to invent tales of ſavage barbarity, in order to render Anatomiſts more obnoxious. Human nature ſhudders at the bare mention of thoſe infernal cruelties. If ever unfeeling monſters could have perpetrated ſuch deliberate torments upon their fellow creatures, they would deſervedly be the objects of univerſal deteſtation, and their memories ſhould be conſigned to everlaſting infamy. I hope and believe that ſuch bloody ſcenes were never actually executed, but by the vileſt outcaſts of ſociety, hangmen, torturers, and other execrable monſters.

The Egyptian practice of embalming ſhews with what anxious ſollicitude they endeavoured to preſerve the dead from diſſolution and decay. It is an art certainly at preſent of very little importance to mankind, but which once formed a diſtinct trade in Egypt. Herodotus relates, that in his time, the moſt expenſive mode of embalming amongſt the Egyptians, was to draw out the brains through the noſtrils by a crooked hook, and to fill up the cavity with gums: the bowels and ſofter organs were alſo taken out and waſhed in Palm Wine, in which odoriferous drugs were diſſolved: they were again returned into the belly, and the empty ſpace filled up with powdered Myrrh, Caſtor, &c. and the ſkin ſewed up. The whole body was next laid in Nitre ſeventy days; then being waſhed, was bound round with ſilk fillets, covered with gums, and was finally placed in a frame of wood. The Ethiopian Grandees were incloſed in a hollow cylinder of foſſil cryſtal. All the Egyptian Mummies imported to our Cabinets are wrapped up in ſeveral hundred yards of bandages, ſo that the corpſe reſembles a clumſy lump of greaſy plaſter cloths. The Egyptians, who lay buried in the chalky cavities of excavated catacombs, ſurrounded cloſely by dry abſorbent earth, have been preſerved ſeveral thouſand years without decay; and from theſe mortifying relicks of human vanity, we learn, that mankind have continued nearly the ſame in ſtature.

Mr. Brydone, in his late tour to Sicily and Malta, informs us, that in ſome parts of Sicily, the ſkin and muſcles of dead perſons are hardened by a particular preparation like dryed fiſh, and that in this ſtate ſeveral hundreds have been preſerved in ſubterranean cavities between two and three hundred years. On the ſummit of the high mountain, called Teneriff, the air is ſo dry and criſp, that dead bodies may be preſerved there without any preparation or care. In our moiſt climate, the beſt method of embalming would be previouſly to inject the blood veſſels, which would contribute both to preſerve a plumpneſs and reſemblance of life, and to prevent decay; afterwards to take out all the internal ſoft and corruptible parts, and to fill up the cavities with gums and aromaticks: the body laſtly ſhould be laid in dry earth or plaſter of Paris, defended from the external air by a caſe and glaſs in the front, and artificial eyes may be inſerted. From this ſhort digreſſion, I return to the two celebrated Anatomiſts before mentioned.

Erasistratus's Anatomy of the Brain and Nerves far ſurpaſſes in correctneſs that of his predeceſſors: his deſcription of the Ventricles in this organ is preſerved by Galen. He diſcovered thoſe white veſſels in the meſentery called Lacteals, which convey the Chyle from the inteſtines to be carried into the blood, but was totally ignorant of their uſe and termination. He wrote treatiſes on the Pulſe, and on the cauſes of diſeaſes. His Pedagogue in Medicine Chryſippus had condemned purgatives and blood-letting, and the pupil imbibed the ſame prejudices againſt thoſe evacuations; perhaps the ſtrong purgatives then in uſe, the Hellebore, Scammony and Colocynth had been followed by bad conſequences. In lieu of Veneſection and Cathartics, he ſubſtituted abſtinence and vegetable diet; and in plethora or plenitude in exceſs, Clyſters, Vomits, Exerciſe and Baths. He exclaimed againſt royal compoſitions, as they were pompouſly dignified, in which plants, animal ſubſtances and minerals were heaped together: he alſo declared himſelf againſt ſuperfluous ſophiſtry in Medicine. After his death, ſome of his diſciples eſtabliſhed a Medical ſchool at Smyrna. Herophilus, his rival in Anatomy, and the pupil of Praxagoras, made more uſe of internal Medicines, both ſimple and compound: he demonſtrated the nerves proceeding from the brain and ſpinal marrow, and two coats of the eye: he mentions a palſy of the heart, as ſometimes the cauſe of ſudden deaths. The works of theſe two Authors are now loſt, but numerous fragments of their practical precepts are preſerved in Cælius Aurelianus and in Galen.

During the era of Herophilus and Eraſiſtratus, Medicine and Surgery, which in Greece had been practiſed by one perſon, was ſeparated into three diſtinct provinces, the Dietetic, Pharmaceutic, and Surgical. Thoſe appellations do not exactly correſpond with the preſent diviſions of the Medical profeſſion. The Surgeon then ſimply performed the manual operations, and was confined to the mere exerciſe of the knife; he did not even treat Ulcers, Wounds or Tumours, they were committed to the Pharmaceutic branch: the Phyſician regulated diet, and preſcribed Medicines when he thought them neceſſary. Two ſects were alſo then formed in Medicine, the Empiric and Dogmatic: each appears to have entertained a greater zeal for his own party, than for the cauſe of truth and of the public, and like all literary factions, carried their oppoſition to abſurd extremes. The

Empiric was the declared foe to all reaſoning: the Dogmatiſt, on the contrary, pretended to unfold the moſt impenetrable ſecrets of nature; and with his ſcanty pittance of Anatomy, Philoſophy and views of Nature, had the preſumption to decide upon elementary principles, to account for the moſt intricate functions of the body, and the primary cauſes of diſeaſes. It is not at all ſurprizing, that the Empirics ſhould be diſguſted with this nonſenſe, and were precipitated into a contempt for all reaſoning and enquiry into human Phyſiology, and into the cauſes of diſeaſes. Thoſe who are deſirous to judge of the merits of the Dogmatic and Empiric ſects, at leaſt in diſputation, may conſult Celſus. The arguments of each are by him ſtated impartially, but in the preſent improved ſtate of Medicine, are become obſolete and inapplicable. No Medical ſect now exiſts, according to the original definition and contracted views of the firſt Empirics, except amongſt Quacks and Mountebanks: neither are there any ſterling Dogmatiſts, in the ſtrict meaning of the word, except amongſt men haunted with waking viſions, whoſe diſtempered brains are filled with monſters and chimeras.

Heraclides of Terentum, the diſciple of Ariſtotle, is called the principal of the Empirics; and Serapion of Alexandria, their original founder: Glaucias and Apollonius are alſo numbered amongſt them. In deſcribing the eſſential or diagnoſtic ſymptoms of diſeaſes, the good and bad effects of

Medicines, or the lædentia & juvantia, the Empirical writers have been very exact. Upon this ſect the methodic which we ſhall preſently meet with at Rome, was engrafted. Heraclides examined the Medical virtues of various plants, minerals and animals. Cælius Aurelianus has collected his Medical precepts, together with a later author, Soranus, which otherwiſe would have been loſt. Moſt of the ancient Surgical writers from Hippocrates, have ſhared the ſame fate, but their eſſence will be found in Celſus.

The chain of Medical writers is now broke, and a few links effaced: the injury however which we ſuſtain from that cauſe, is not of ſo great conſequence as might ſuddenly be conjectured. Moſt of the ancient Medical fragments, the originals of which only are now periſhed, have been recorded in the works of ſome later authors of Rome, and other parts of that large empire. We ſhall take up the chain again about ſixty years before Chriſt appeared in the world.

CHAP. IV.

Of Rome, the Phyſicians and Writers in that Capital, and in other parts of the Roman Empire. A few ſelect Greek Writers on Medicine and Surgery, during the Decline and Three laſt Centuries of this Empire, and about a Century after its Fall in Italy.

IF we believe Pliny, the naturaliſt, Rome was built ſix hundred years before any Phyſicians eſtabliſhed themſelves in that city. Dionyſius Halicarnaſſus may be oppoſed to the authority of Pliny. This Author ſays, " That three hundred " years after the foundation of the capital, a furious " Plague ſwept away great part of the inhabitants, " ſlaves, and citizens, and that the Phyſicians were " too few for the number of ſick." The Roman Phyſicians probably were but a ſort of illiterate Empiricks, and Pliny might think them undeſerving of any regular title. Arcagathus, a Greek, is mentioned by Pliny as the firſt foreign Phyſician, or rather Surgeon, who practiſed at Rome, (U. C. 535.) This ſtranger, he adds, employed ſo frequently the knife, and hot iron, he cut and burnt with ſo much cruelty, that the Romans gave him the opprobrious appellation of hangman, and conceived an averſion to the Medical profeſſion.

Asclepiades, about one hundred and thirty years after, is the ſecond ſtranger who exerciſed

Medicine in the Roman Metropolis: a man we may conclude of ſome diſtinction, from his being admitted to the intimate friendſhip of Cicero. Pliny remarks, that notwithſtanding the great profits acquired by Medical practitioners, when Rome had grown into a ſtupendous capital, and was enriched with the ſpoils of various nations, yet very few Romans ſtudied the Science: the only two writers of any note, of Italian extraction, are Celſus and Pliny. Cicero aſſures us, that until his days the Romans deſpiſed Philoſophy. Marcus Cato, in a letter to his Son, then compleating his ſtudies at Athens, expreſſed his fears and apprehenſions, that the liberal Arts and Sciences of the Greeks, including in theſe Medicine, when compleatly introduced into Rome, would corrupt the Romans. A little attention to the hiſtory of that nation will enable us to ſolve many doubts and difficulties which have embarraſſed this ſubject: it would otherwiſe be impoſſible to purſue diſtinctly the progreſs and future cataſtrophe of Science and Medicine.

Almost five hundred years of the Roman Republic were ſpent in poverty and inceſſant domeſtic wars. In 489, U. C. the Samnites, the only ſurviving rival ſtate, was ſubdued, and all Italy now took laws from Rome. Then began a foreign war againſt Carthage. Before the ſecond Punic war, the Temple of Janus was ſhut (a ſign of peace) for ſix years only. Livy obſerves this had happened but *once* before in the ſpace of five hundred years; and that the ſpoils of Syracuſe, the beautiful capital of Sicily, which was ranſacked in the Carthaginian war, and in which the celebrated Mathematician and Mechanical genius, Archimedes, loſt his life, gave the firſt beginning of that taſte, which the Romans acquired for the Greek arts. Five ages were now elapſed ſince Romulus, with a ſmall banditti of ſhepherds and outlaws, had laid the foundations of Rome. In the two ſucceeding centuries, and part of the third, they conquered immenſe poſſeſſions in Europe, Africa, and Aſia. Eager and impatient to dazzle the world with the ſplendor of their arms, and to impoſe the galling yoke of ſubordination, the globe was ravaged by their ambition and rage for conqueſt. Neither Study, Speculation, nor Letters, were ſuited to their diſpoſition and military education. Conqueſt, and the deſtruction of mankind, was then thought the height of virtue and human excellence.

About the era of Auguſtus and the birth of Chriſt, which correſpond with 752 from the foundation of Rome, that haughty people, who had inceſſantly violated the rights of other nations, were, by a rapid ſucceſſion of conqueſts, in poſſeſſion of the faireſt portion of the earth, and an aſtoniſhing liſt of potent ſtates were annihilated in the Roman empire. Before the end of the ſecond century of the Chriſtian era, during the ſplendor of Trajan and the Antonines, all the mighty civilized kingdoms of antiquity (Perſia, India and China excepted) were ſwallowed up in the Roman empire, and the number of its inhabitants were computed to be equal to the preſent population of all Europe. The northern part of our hemiſphere, where powerful kingdoms are now erected, was then a frightful wilderneſs: the Roman barrier to the north was generally terminated by the Rhine and the Danube.

FOREIGNERS of various profeſſions and arts from the remoteſt provinces, attracted by its riches and renown, were now received into the capacious boſom of Rome. All the liberal arts had been gradually imported from Greece to Italy: from that native ſeat of the Muſes and Arts Rome drew her Poetry, Rhetorick, Logic, Muſic, Architecture, Sculpture, her Laws, Learning, and Refinement. Medicine appears to have followed the train of other Sciences in Rome, to have ariſen and fallen with them. Plautus, Terence, and Lucretius, ſucceeded Arcagathus: Aſclepiades was the cotemporary of Cicero and Cæſar: Celſus of Horace, Ovid, and Virgil. This is the Auguſtan age, which gave birth alſo to Livy, Varro, and Vitruvius. Pliny and Galen ſucceeded Tacitus, and flouriſhed in the ſecond century of the Chriſtian era, before the end of which Rome had attained to the full maturity of Science and Military fame. From this period the Empire begins to decline, and in leſs than four hundred years after, Italy and the Weſtern hemiſphere was cruſhed in ruins by the Northern barbarians.

In Cæſar's time, the number of books which adorned the Alexandrian library exceeds almoſt credibility. This monument of the taſte of the Egyptian Kings was in part involuntarily deſtroyed by that conqueror. During the war at Alexandria, Cæſar was under the neceſſity of preſerving himſelf and his army by ſetting fire to the Alexandrian fleet, when unfortunately the flames communicated to this renowned library, and four hundred thouſand volumes are ſaid to have periſhed. In a ſhort time, however, by the library of Marc Anthony, and the liberality of Cleopatra, it regained its ancient ſplendor; and until the time of Mahomet's ſucceſſor, ſix hundred years after, this noble collection continued at Alexandria. The libraries of ſome great and rich Romans in the ſecond century were grand and expenſive: that of Gordian, a citizen of noble birth and immenſe riches, who afterwards was elected Emperor, is ſaid to have contained ſixty thouſand volumes.

The ſtate of Medicine and Surgery, and the improvements which they received in the Roman Empire, ſhall now be the ſubject of our enquiry.

Asclepiades (U. C. 690, A. C. 62) of Bithynia, firſt gave lectures on Eloquence and Rhetoric at Rome: in this Science he is allowed to have poſſeſſed conſiderable merit, and from thoſe qualifications probably recommended himſelf to the intimate friendſhip of Cicero. Shortly after he reſigned the chair of Oratory to commence Phyſician; a profeſſion, we may fairly preſume, from this circumſtance, not leſs lucrative. Whether Aſclepiades acted from conviction, or meant by the ſingular novelty of his doctrines to attract the public attention, ſeems doubtful: certain it is, he introduced ſeveral innovations into the theory and practice, and overturned a great part of the Hippocratic Medicine. Health, in his new ſyſtem of conjectures, was ſaid to depend upon the proportion and ſize of the pores, and of the atoms or little corpuſcles which paſs through them: a diſproportion in either produced diſeaſe. Democritus ſewed the ſeeds of this Philoſophy, if ſuch it deſerves to be called, and was followed by Eraſiſtratus. In Fevers, topical inflammations and pains, little atoms were ſuppoſed to obſtruct the pores: in Dropſy the pores were ſaid to be too relaxed. All his remedies were directed to remove thoſe two imaginary cauſes of diſeaſes: obſtruction was aſſailed by geſtation, frictions and exerciſe of various kinds, as ſailing, and when more gentle, ſuſpended beds, admitting of agitation. He is reported to have been the inventor of a hundred new ſorts of baths. In the beginning of Fevers, Celſus ſays, he treated his patients like a hangman, refuſing them all kinds of ſuſtenance, or even drink, and preventing them from ſleep: this had been the practice of Heraclides: thoſe ſeverities were continued during the three firſt days of ſickneſs, but after that period he gratified tiſied all their cravings. In oppoſition to the practice then in vogue, he propoſed to cure all diſeaſes, "tuto, cito, & jucunde." Sometimes he mixed ſalt water with wine, (a favourite remedy of his in moſt diſeaſes) pretending that the ſalt would penetrate further and open obſtructions: he gave ſalt water alſo in the Jaundice. He bled in a Pleuriſy, but not in a Peripneumony, becauſe there was leſs acute pain in the latter, and according to his Theory, leſs obſtruction. In imitation of Chryſippus and Eraſiſtratus, he proſcribed vomits and purges: he imagined they diſſolved the humours; but he frequently preſcribed Clyſters to remove coſtiveneſs. He ridiculed the doctrine of critical days in Fevers: the Phyſician's buſineſs, he ſaid, was to remove the Fever without truſting to the tedious and precarious efforts of nature. He baniſhed almoſt all internal Medicines from his practice, and depended principally upon regulations of diet, friction, geſtation, exerciſe, and baths. In ſome caſes he had recourſe to charms and incantations.

Antiquity held this man in high veneration. His Rhetorical talents, addreſs and knowledge of mankind, enabled him to give a ſpecious gloſs to his greateſt abſurdities. Celſus confeſſes to have taken ſome good hints from him: in Fevers his practice is nearly a copy of Aſclepiades. Pliny, in my opinion, draws his true character in a few words, wherein he dubs him an illuſtrious Empirick: to whom it is but juſtice to add, that Medicine owes ſome obligations and powerful remedies: nor are ſome of his remarks in Philoſophy and Medicine deſtitute of originality and merit. He is reported by his cotemporaries to have been proud, ambitious, bloated with envy and conceit, and affected to hold all other Phyſicians in great contempt, and when conſulted was ſure always to traduce and to reject their preſcriptions. Such unintereſting anecdotes ſerve at leaſt to account for certain extravagancies in his Medical practice and writings.

Themison, a diſciple of Aſclepiades, conceiving ſome diſlike to his maſter's ſyſtem, erected a new ſect called the Methodic; or in other words, an eaſy and ſhort method of attaining Medical knowledge. The Empirics had abridged part of the labour of the Dogmatiſts, by excluding not only proximate cauſes, and all abſtract reaſoning, but even evident cauſes from their ſyſtem. The Methodiſts cut the matter ſtill ſhorter, and by one bold leap reduced all diſeaſes to two heads or claſſes: the one from overbracing; the other from an oppoſite fault, relaxation. All remedies were ſuppoſed either to brace or relax, and the particular diſeaſes under each claſs to require nearly a ſimilar treatment: a third or mixt claſs was alſo added, wherein "Strictum et Laxum" were compounded. Such ridiculous fancies, in the preſent enlightened days, are beneath diſcuſſion or ſerious refutation. Sects were then the faſhion: Cæſar was an Epicurean, Cato a Stoic. Themiſon invented the form of a uſeful purgative, ſtill in uſe, compounded of aloes, ſaffron, a few warm ſpices and aromatics, and by us called "Hiera Picra:" upon the baſis of this a Tincture is now extracted by wine. I believe he is the firſt who directed leeches to evacuate blood, and to be applied to the temples in head-achs.

THESSALUS, many years after, made ſome additions to the doctrine of Themiſon, and his ſyſtem was greatly reliſhed, becauſe it cou'd be learnt in a ſhort time, and required very little experience. He boaſted to his pupils, that he would abridge the ſtudy of Medicine to ſix months: the whole myſtery conſiſted in bracing and relaxing the ſolids. Gil Blas is the only commentary or criticiſm I ſhould recommend upon ſuch ſyſtems. Theſſalus was, notwithſtanding, in the firſt repute at Rome, ſo ill founded often is popular applauſe, eſpecially in the Medical profeſſion. Pliny ſays he never could appear in public without being attended by a numerous crowd, and that he wrote more groſs volumes than could be read in ſix months, the ultimate term affixed by him to Medical ſtudies. He too decryed purgatives, and eſtabliſhed abſtinence from food during the three firſt days of ſickneſs as a fundamental rule. Galen draws an unfavourable portrait of Theſſalus: he aſſerts, that the latter raiſed himſelf into conſequence and practice by aſſiduity, complaiſance and flattery of the great, and by extreme impudence. His perſonal conduct is of no importance to poſterity. Theſſalus appears to have entertained a thorough good opinion of his own talents, and has drawn his own character in the Epitaph which he ordered to be engraved upon his tomb ſtone, "Here lies Theſſalus, the conqueror of "Phyſicians." We may ſet him down as an impudent Empiric.

The Methodic ſect ſubſiſted ſeveral centuries in great reputation. They deſcribed the ſymptoms of diſeaſes with peculiar correctneſs, but neglected the ſtudy of Anatomy and Phyſiology; nor in practice did they beſtow any material attention to age, ſex, cuſtom, habit, climate, ſeaſon, &c. They gave themſelves no concern about the condition of the fluids, alledging that the conſtitution in moſt caſes, was deranged by either too great tenſion or flaccidity of the ſolids. Three more ſects ſprung from theſe different roots of the Empiric, Dogmatic and Methodic, and were called the Epiſynthetic, Eclectic and Pneumatic.

Cælius Aurelianus, an African of Numidia, contains the completeſt ſyſtem of the Methodic theory and practice now extant; he is ſtiled the copyiſt of Soranus, a Phyſician who lived under the emperors Trajan and Adrian, in the ſecond century, the eſſential part of whoſe writings are tranſcribed and preſerved by Cælius. In many caſes Cælius deviates from the original rules of Medical methodiſm, as arraigned by Galen, and mentions the remote, or manifeſt cauſes of diſeaſes, and ſometimes he animadverts upon the pulſe.

In what part of the Roman Empire Cælius practiſed Medicine is not agreed. His language is coarſe, provincial, and replete with barbariſms. I have introduced him before Celſus, who lived, at leaſt, a century and a half earlier, in order to diſmiſs the writers of this particular ſect. In his works there are various criticiſms on the practice of Diocles, Praxagoras, Heraclides, Herophilus, Eraſiſtratus, Aſclepiades, Themiſon, and Theſſalus, of which we ſhould otherwiſe have remained ignorant.

Cælius diſtinguiſhed a number of diſeaſes accurately. He deſcribes the ſymptoms of Phrenitis, Catalepſis, Lethargy, Epilepſy, Apoplexy, Palſy, Tetanus, different ſpecies of Madneſs, and Hydrophobia, of the Quinſy, Pleuriſy, Peripneumony, Phthiſis Pulmonalis, Atrophy, Cachexia, Aſthma, different genera of Dropſies, of the Jaundice, Elephantiaſis, Gout, Iſchias, Nephritis, Iliac Paſſion, Paſſio Cardiaca, diſeaſes of the Stomach, Worms, diſeaſes of the Urinary paſſages, and of the Genitals. His claſſification of theſe diſeaſes was ſtrictly Methodical. They were diſtorted and dragged into unnatural arrangements, and comprehended under three general Claſſes, "Strictum, "Laxum, and a third or mixed Claſs, partaking "of the nature of both the former."

During the firſt three days of ſickneſs, Cælius preſcribed a rigid abſtemiouſneſs in diet. He was equally circumſpect as to the quality of the element uſed in reſpiration. To refreſh the air, the branches of various trees, ſhrubs, and flowers were placed in the room, in order to medicate it with different exhalations, according to the nature of the diſeaſe. Minute directions were alſo given about the beds of the ſick, whether they ſhould lie on feathers, or on a ſingle mattraſs. At the end of every diſeaſe, he preſcribed exerciſe and various kinds of geſtation and frictions. He reprobated the ſpecific remedies in vogue in thoſe days, conſiſting of various inert materials, ſome ſufficient to excite contempt, others horror.

Cælius often gave Vomits, but purgatives rarely; he imagined they hurt the tone of the ſtomach and inteſtines, and occaſioned relaxation. Violent and long continued purging has, without doubt, been very improperly preſcribed in many Chronic caſes. In Dropſical ſwellings, he preſcribed vomits, ſquills boiled in wine, as a diuretic, warm dry Baths or Stoves, as a ſudorific, and in diet, warm Aromatics and Diuretic vegetables; he alſo ordered Exerciſe, Sea-voyages, and laſtly, the Abdomen to be tapped. In drawing away water by a puncture into the abdomen, he recommended a tight bandage to be rolled round the belly to prevent ſudden fainting. In the aſcites, the ſick perſon was barely allowed to waſh his mouth with water to allay thirſt. In the Tympanites, or windy Dropſy, as it has been termed, the diſeaſed perſon was ſometimes placed in ſand, heated either by the fire, or the ſun's rays, and a ſweat forced: another way he mentions to force ſweats, is by the heated vapour of ſea-water. He mentions, as a diuretic in the Dropſy, an extremely acrimonious and dangerous gummy reſin, Euphorbium. To reduce exceſſive corpulency, he recommended a conſtant ſucceſſion of different exercifes, weak meagre diet, little ſleep, dry or ſand baths, frequent frictions of the body with cloths, and to keep the mind agitated in active buſineſs.

In the Apoplexy he ordered Veneſection, a Clyſter, the head to be ſhaved, ſcarified and cupped, and afterwards ſome external applications to the head. He directed a particular and eaſy invention for exerciſing paralytic members, together with friction and acrid external applications to the ſkin to rouze motion, to viſit the warm mineral ſprings of Italy, to ſwim in the ſea, or in warm baths, with bladders under the arms, and the paralytic member to be ſometimes placed under a Cataract or fall of water.

In the Quinſy he bled, applied emollient Poultices externally, directed warm vapour into the throat, gargles for the mouth, and ſometimes ſcarification and cupping glaſſes, or leeches to the external tumour of the fauces. The juice of horehound and honey mixed, was one of his preſcriptions in the Pulmonary Conſumption, and he ordered cupping glaſſes to the pained ſide. To burſt a Vomica, or Abſceſs in the lungs, he preſcribed Sternutatories, Vomits, and fumes of ſulphur, or origanum, to be inſpired, ſo as to excite a violent fit of coughing. If a paroxiſm of Aſthma threatened ſuffocation he bled, injected a Clyſter, cupped and ſcarified the breaſt, and the back between the ſhoulders,

ders, applied warm vapour by means of ſponges or flannels to the breaſt: after the termination of the paroxiſm, he ordered a Vomit, and in the intervals vinegar of ſquills, an electuary of honey and reſin of turpentine, honey, and vinegar, and a multitude of other ingredients, together with certain mineral waters, the breaſt to be ſubjected to a fall of water, ſea voyages and travelling.

In the Iliac Paſſion he bled, injected an emollient clyſter, applied warm vapour, emollient Cataplaſms, and a bladder filled with warm oil over the pained part, and alſo cupped and ſcarified it, and placed the patient in a warm bath. To deſtroy the ſmall human worms, called Aſcarides, he injected oil into the Anus, and to deſtroy the round worms he gave oil by the mouth, Bitters, and a profuſion of other medicines. He mentions the moſt general occaſional cauſes and ſymptons of the Gout, and obſerves, that it is more frequent amongſt the male than the female ſex, and more ſo at the middle age, and that it is often hereditary; that the antecedent cauſes are often habitual drunkeneſs, or neglecting their accuſtomed exerciſe: the ſeat of the Gout he ſaid is originally in the nerves, and that it is extremely difficult of cure when of long continuance. In the paroxiſm of Gout, if the belly was coſtive, he gave a clyſter, cupped and ſcarified, or applied leeches to the inflamed foot, or ſcarified it only, fomented it with warm vapour, and applied light emollient poultices; ſometimes he directed muſtard ſinapiſms to the ſeat of pain; but he was averſe to uſtion and to internal medicines. On recovery, any injury of the foot, cold, indigeſtion, exceſs of wine and venery were to be carefully avoided; when able, they were to walk about and to uſe exerciſe, and to drink the warm mineral waters.

"METASYNCHRISIS" is a techinal term in the Methodic practice, by which they pretended to direct remedies that would draw from the center to the circumference, change the pores, reduce them to ſymmetry, and of courſe, as they conjectured, the body to health. They alſo adminiſtered the "circular rotine," pompouſly ſo denominated. It was plainly no more than this; if one method of cure failed, another was tried; and ſhould the diſeaſe prove obſtinate, a ſucceſſion of experiments, fatiguing proceſſes, and change of remedies, were perſevered in through three or four different courſes: an example of the practice may be ſeen in Cœlius, in the caſe of a Chronic Head-ach. Sick perſons muſt have been bleſſed with a large ſtock of patience and phlegm to ſubmit to the whole circular rotine: it was ſufficient to ruffle the temper of Job. A wit obſerved, that a man who could undergo the ſucceſſive series of Methodic diſcipline, and yet recover, would in all probability make a hardy ſoldier.

A WRITER from Cappadocia, Aretæus, is in the hands of every Medical man, and ranks high in the liſt of ſelect practical authors. Hoffman, a competent judge of Medical merit, calls his works golden monuments of Phyſick. His arrangement of diſeaſes, both acute and chronic, but particularly of the former, is judicious. He reduced Hippocrates and other Greek writers, his predeceſſors, into better order; and from them transfuſed whatever he thought uſeful. In the accurate diſcrimination of diſeaſes from each other, no better guide can be followed amongſt the ancients: his Medicines alſo are in general powerful, and well choſen out of thoſe then known and diſcovered. In the cure of ſome Chronic diſeaſes very little improvement, at this diſtance of time, has been made to Aretæus. He deſcribes the peſtilential or putrid Sore Throat, which he obſerved was fatal principally to children. He mentions a ſpecies of religious madneſs, where the wretched Fanaticks tore their fleſh and made inciſions into it, believing that they ſhould, by thoſe odious barbarities, render themſelves more acceptable to the Deity. In the Leproſy, he preſcribed Hellebore as a purge, and vipers in food, together with acrid detergent baths of ſharp pointed dock and ſulphur, boiled in water. White Hellebore was a favourite emetic and remedy with him in ſeveral Chronic diſeaſes, and Hiera Picra, a favourite purgative. In one ſpecies of Epilepſy he propoſed to rub the head with Cantharides: he cured another by trepanning the ſkull. Archigenes, his predeceſſor, is the firſt who employed Cantharides in Cataplaſms to raiſe veſications: but their application for many ages after was extremely confined. He truſted much to various exerciſes and baths, in the cure of ſeveral diſeaſes, and like all the Methodics to a multitude of external Applications, Fomentations, Unctions, Frictions, Cataplaſms, and to the Dietetic regimen.

Aretæus is claſſed as one of the Pneumatic or Spiritual ſect, who eſtabliſhed a fifth element; but which in fact ſeems only to have meant the air we breathe in reſpiration. His ſyſtem and ideas of the proximate cauſes of diſeaſes roll upon the ſenſible qualities of the four ancient elements. Boerhaave eſteemed Aretæus equal to Hippocrates, and adds, "Hujus autem viri auctoritatem Hippocrati equalem habemus, in hoc etiam emicuit "ſupra Hippocratem quod ad ſuas Claſſes et capita ſparſa Hippocratis redigerit." Haller conſiders him as greatly ſuperior to Hippocrates; but obſerves, that he had the advantage to live long after the Father of Medicine, and to profit by his diſcoveries. The commmendation of two ſuch excellent critics renders any farther encomium on this reſpectable Ancient ſuperfluous. Authors are at a loſs to fix the preciſe time when Aretæus wrote, whether ſhortly before or after Galen.

About the commencement of the Chriſtian era, during the reigns of Auguſtus and Tiberius, Celſus lived at Rome. Diſputes not yet adjuſted have ariſen, whether he followed Medicine as a profeſſion, or only attended to it as an entertaining object of Science. His ſyſtem of Medicine and Surgery, it is agreed, rivals the firſt in antiquity.

quity. Quintilian ſays, that his various genius led him alſo to write on Poetry, Rhetoric, Tactics, and Agriculture. Fortunately for Phyſick and Surgery, his Medical works have deſcended to us intire. In eight ſhort chapters or ſections, making in the whole but one ſmall volume, he has with elegance and conciſeneſs deſcribed every diſeaſe then known, and may be ſaid to have compreſſed together almoſt the whole eſſence of ancient Medicine and Surgery. His obſervations are ſelected with judgment, and are calculated for uſe and buſineſs: in order and arrangement he excels Hippocrates, from whom the greateſt part of his prognoſticks are compiled: his language is eaſy and familiar, and the practical rules unadulterated with conjectures.

Celsus treats of the origin and progreſs of Medicine. He examines, as Hippocrates had done before him, the ſalutary and morbid effects of the ſeaſons, of heat, cold, winds, rains, and the diſeaſes moſt predominant in the different ſtages of life. He enumerates a great variety of animal and vegetable food, and of drink uſed by mankind, diſtinguiſhing the diet into three claſſes, the ſtrong, middle, and weak, together with their various effects and operations in the human body in health and in diſeaſe.

He divided Fevers into ſeparate genera; into Quotidian, Tertian, Quartan, Semitertian, Continual, Peſtilential, Ardent and Slow Fevers, and thoſe accompanied with topical inflammations, the

Pleuriſy, Peripneumony, &c.: after thoſe general Fevers, he treats of diſeaſes affecting the Head, the Trunk, the extremities and external parts, and of Surgical diſeaſes.

The outlines of Celſus' practice in Fevers were evidently copied upon thoſe of Aſclepiades, but were not at firſt ſo ſevere. From the commencement, until after three days, abſtinence from food was preſcribed; but indulgencies were made for the difference of ages, climates, ſeaſons of the year, ſtrength, habit, and nature of the Fever. No general rule he ſaid could be laid down: In Africa, food muſt be given earlier; it muſt be given earlier to children, and in warm weather, than in cold; and the Phyſician is to watch that the ſick are not loſt through ſevere abſtinence. Drink at the beginning is to be given ſparingly, and the ſick are to be told, that on the Fever abating, ſo will the thirſt, which may be conſiderably aſwaged by merely waſhing their mouth often. He condemns the Hippocratic doctrine of critical days, but was extremely attentive to the acceſſion or periodical returns of febrile paroxiſms, and to give food in the intervals only, or remiſſion from Fever. If the Fever was nearly of a continued nature, he ſought for the time of moſt eaſe and remiſſion, to adminiſter light food. Towards the termination of a febrile paroxiſm, when a ſweat was coming on, he directed warm drink to be given, and to cover the ſick with warm bed-cloaths, ſo as to promote univerſal ſweats, afterwards to wipe them dry.

Coſtive-

Coſtiveneſs was to be removed, and the urinary diſcharge promoted. In ſome caſes a warm bath was preſcribed. The air in the ſick chamber was to be kept freſh and cool. The ſick were to be kept as eaſy as poſſible and free from cares, and every thing avoided that might exaſperate, depreſs, or ruffle their paſſions.

In ſlow and languid Fevers, he ordered the patient's body to be rubbed with oil and ſalt, or with cold water and oil, to excite a cold and hot fit, and if the cold continued too long, to give two or three glaſſes of wine, diluted with water. The ſame preſcription was ordered in ardent Fevers; and ſometimes, in the latter Fever, about four days after the commencement, large draughts of cold water were given, immediately after a vomit was ſwallowed, the ſick were then covered up in a warm bed to promote plentiful ſweats, and often fell into a profound ſleep, from which they awaked greatly relieved. In Fevers attended with a cough, or with topical inflammations, he forbad cold water to be drank. Throughout Fevers of every denomination he attended, whether the Brain, or any of the principal Viſcera were diſordered or inflamed: in the former caſe, the forehead and temples were bathed and kept wetted with an infuſion of roſes and vinegar, and grateful and refreſhing ſmells were applied to the olfactory organs. If the tongue was foul, it was ſoftened with warm water, and afterwards anointed with Honey of Roſes, and with other detergents. Wine and light broth was allowed to thoſe whoſe ſtrength was impaired by the length and violence of the Fever, and by the frequent returns of febrile paroxiſms. Wine in all caſes was the common and palatable cordial of Celſus. Hippocrates had excepted infancy and old-age from Veneſection. Celſus thought it might be drawn at any age when the ſtrength permitted, and the diſeaſe required ſuch an evacuation. In ſeveral ſpecies of Fevers, he preſcribed Veneſection, but at the ſame time complains, that it was then too frequently employed. Celſus paid no regard to the pulſe, he looked upon it as an uncertain criterion, becauſe age, ſex, temperament, paſſions of mind, diſorders of the ſtomach, pain, and the appearance of the Phyſician, diſturb its pulſations and affect both its frequency and ſtrength. He regarded with particular attention the eyes, countenance, and breathing, and the ſtate of the ſkin, whether cold, hot, dry, and parched, or whether covered with general, or with partial ſweats.

In the cure of Quartan Fevers, he directed ſevere abſtinence during the firſt thirteen days, to take a vomit at the beginning, and always, when the fit was expected, to prevent it by going into the warm bath, after which a little light nouriſhment and wine was allowed. By ſuch abſtemious regimen, and by baths, the Fever was often ſubdued; but ſhould it ſtill prove obſtinate, the baths, he ſays, muſt be omitted, and we muſt truſt to exerciſe, friction, and increaſe the quantity of nouriſhment and of wine; coſtiveneſs alſo muſt be prevented. Garlick eat, or pepper ground, and mixed with water, or muſtard with wine, and a glaſs or two drank immediately before the cold fit was expected, he recommended as ſometimes effectual in preventing the paroxiſm. The horror preceding febrile paroxiſms, he ſaid often aroſe from bile in the ſtomach, in which caſe a little warm water was uſeful to promote vomiting. In the Peripneumony he bled, cupped the ſides, gave for drink a decoction of hyſſop and figs in water, or an infuſion of hyſſop ſweetened with honey, and in the height of the diſeaſe, was cautious not to admit too cool air into the chamber. In the Pleuriſy he bled, applied muſtard and vinegar to the pained ſide, to excite bliſters, and to draw away the hûmours, or cupped, ſcarified and fomented the pained part. In the Quinſy, or Angina, he bled, gave a clyſter, cupped the fauces externally, rubbed warm oil on the ſeat of pain, or applied warm ſalt in a bag to the throat, he alſo gargled, fomented, and if the diſeaſe was violent, he bled under the tongue, and ſcarified the Uvula and Tonſils.

He deſcribes three different genera of Tabes, the Atrophy, Cachexia, and Phthiſis Pulmonalis. In the Pulmonary Conſumption, the patients were directed to avoid the baths, cold, catarrhs, intemperance and venery: they were to uſe a vegetable and milk diet, and alternately a little light fiſh, and ſuet puddings. As a Medicine, he recommended the expreſſed juice of plantain, or of horehound boiled with honey, a ſpoonful of which was to be ſipped daily; and he ſometimes gave a ſoft paſte or linctus of butter, honey, and the reſin of turpentine boiled together, with ſeveral remedies, to mitigate the cough. If, however, the Fever and Cough increaſed, and the body became more emaciated, he made Ulcers in the ſides and between the ſhoulders, with a hot iron, and theſe were not to be ſuffered to heal up until the cough was removed: the Patients were daily to uſe friction and exerciſe either by walking, by carriages, or by ſailing: as the laſt reſource, he adviſed a change of climate, and a Sea-voyage to Alexandria. In the Aſthma he bled, fomented the breaſt and ſides, ſometimes ſcarified, gave the ſize of a bean of honey, galbanum, and reſin of turpentine boiled together, which was kept in the mouth to diſſolve ſlowly: he alſo recommended garlick, water-creſſes, and ſuch other diet as promoted urine, to drink a ptiſan of hyſſop with honey, to uſe exerciſe and frictions, and to keep the Belly temperate.

The Epilepſy he ſaid was more frequent amongſt the male than the female ſex; that it was ſeldom, except when recent, dangerous to life; that at the period of puberty it was often removed, after having reſiſted every means of cure. In this diſeaſe, he ordered the head to be ſhaved, and to be bathed or rubbed with oil and vinegar, or with vinegar and nitre, to draw blood on the day on which the fit was expected, ſometimes to purge with black hellebore, and to vomit with white hellebore, to

uſe

uſe much exerciſe by walking, and afterwards violent friction in a warm chamber, and next in ſucceſſion cold water to be poured on the head; ſhould the diſeaſe ſtill continue rebellious, to ſcarify, and to cupp the occiput, and to make two iſſues or running ulcers in the nape of the neck; heat, cold, wine, venery, paſſions of mind, anxiety, laſſitude, fear and terrour, to be avoided. In obſtinate chronic Head-achs, he ordered the head to be ſhaved, and to be bathed with warm water, or with ſalt water, or a decoction of Laurel; to excite ſneezing; to gargle the mouth with ſuch ſubſtances as promoted a flow of Saliva; to uſe daily frictions of the lower extremities; to cupp the temples, and back part of the head, to apply to the pained part ſinapiſms of muſtard, and in the laſt extremity, to burn with a hot iron; to be abſtemious in diet: heat, warm applications and coverings to the head, agree beſt with ſome, refrigerants with others, and experience alone muſt determine the choice. Perſons ſeized with ſymptoms of Lethargy, were ordered to have cold water thrown upon the head, the head to be ſhaved and bathed with a decoction of rue, or of laurel; ſeveral other applications were directed to the head, and ſtrong ſtimulants or fetid ſubſtances to be applied to the olfactory organs, and ſneezing to be excited. He mentions the utility of warm Baths, and of the "Baiæ," thoſe warm Baths of Italy, where a ſulphureous vapour aroſe ſpontaneouſly from the earth: this remedy he preſcribed in ſome Nervous diſorders to excite ſweat, diſcharge the old humours, and to change the whole habit of the body by a new ſupply. In one ſpecies of Leproſy, he preſcribed, as part of the cure, ſweating in warm ſtoves.

He diſtinguiſhed the different genera of Dropſies, and in the Abdominal Dropſy, or Aſcites, recommends to meaſure the body daily, together with the drink and urinary excretions, in order to judge how far the diſeaſe yielded to Medicine. In all caſes of Dropſy, he recommended conſtant exerciſe by walking, the extremities to be daily rubbed, no more drink or fluids to be taken, than what is barely ſufficient to ſuſtain life, and of that quality which promotes urine; food to be of the ſolid kind, and eſpecially of fleſh, and a little rough wine to be drank; ſweats to be forced in dry ſtoves, or in warm ſand, or what is preferable, in the natural ſudatoriums or vapour ſteams emitted from the earth, in ſome parts of Italy; the belly to be kept temperate, more by laxative diet than by Medicines: the final reſource was to draw away the greater part of the water by a puncture into the Abdomen. A pipe of lead or braſs, with a broad brim, to prevent its falling into the abdomen, was to be kept in the orifice until the remaining water was all gradually drawn off; and the former regimen to be continued for ſome time, until perfect recovery. In the Leucophlegmatia or Anaſarca, he ordered the Skin to be rubbed twice in the day, and one hour each time, with ſoft and warm hands, wetted with ſalt, nitre and oil; and to make inciſions in the legs above the ancle, to give vent to the water.

He deſcribes various Chronic diſeaſes affecting the ſtomach, and the remedies adapted to each. If Phlegm abounded in the Stomach, he ordered vomits, exerciſe, friction, ſailing, nothing cold to be eat nor drank, nor food liable to generate phlegm. If Bile abounded in the Stomach, he preſcribed vomits, purges, exerciſe, ſailing, infuſions of wormwood, rough wine, and food eaſily digeſted. In that worſt diſeaſe of the Stomach, relaxation, when it would not retain nor digeſt any food, he preſcribed exerciſe, eſpecially of the arms and ſuperior parts, which he ſaid was uſeful in moſt complaints of the Stomach, to read aloud, ſo as to agitate the Lungs and Stomach, to uſe friction, and the cold bath, general or only partial to the region of the Stomach, with cold food and drink, and rough wine: food corrupted in the Stomach is to be rejected by vomiting, and freſh food taken. In the Cholera morbus, a precipitate diſeaſe, he gave warm water to be drank to promote the vomiting, and when the crudity in the diſcharge of the Stomach was cleared away, he immediately gave wine and water to recruit the exhauſted ſtrength, and if it was quickly rejected by the mouth or anus, more was given. If the diſeaſe ſtill proved refractory, with fainting and contraction of the extremities, he applied cupping glaſſes and muſtard to the Stomach, and to the extremities warm fomentations, and anointed them with warm oil. He deſcribes various diſeaſes of the Liver and Spleen, and of the inteſtines. In the Jaundice, after regulating the diet, he preſcribed a purge. Aſclepiades gave for this purpoſe, ſalt water. Celſus likewiſe recommended, in the Jaundice, exerciſe, frictions, and, if in the winter ſeaſon, ſwimming in a warm bath, if in the ſummer, in a cold bath, to drink ſome wine, and to indulge in all amuſements. The Hæmorrhoids or Piles, he ſaid, were ſometimes followed with dangerous conſequences, when ſuppreſſed. If the Anus was inflamed, the patient received eaſe by ſitting in warm water, and by ſome other external applications. Where Piles of long continuance were ſuppreſſed, he adviſed to uſe afterwards much exerciſe, and at certain intervals to draw blood from the arm. In the Dyſentery, he is rather ſudden in preſcribing aſtringents: to eaſe the pain and irritation of the inteſtines, he injected, by the anus, melted ſuet, or oil, or a decoction of Linſeed, or the whites of eggs, with roſes and butter, and after every dejection, bathed the anus with warm water. One remedy he praiſes in a chronic Diarrhœa, to ſtrengthen the weak Inteſtines, is riding on horſeback.

In caſes of furious Madneſs, medicines, he ſaid, were preſcribed in vain during the paroxiſm of rage: the Maniac was to be bound, and if the ſtrength was great, blood was drawn; the head was ſhaved, cupped, and fomented with different ingredients; a purge was given; ſleep, which is highly uſeful in all caſes of Madneſs, was ſolicited by frictions, by the Poppy, by ſuſpended beds, and by a fall of water. Sternutatories were ſometimes ordered: the Paſſions were carefully watched, and thoſe who were audacious or refractory to counſel were chaſtiſed by ſtripes, and puniſhed by hunger: thoſe who prefer darkneſs ſhould be kept dark, and, vice verſa: the diet to be of the weak ſort, and ſcanty. In the Melancholy madneſs, he drew blood at the beginning, purged and vomited with the black and white hellebore, and if they refuſed to ſwallow it, it was mixed withtheir bread; he ſhaved and cupped the head; ſometimes cold water was poured on the head, and the body bathed in water and oil: he ſolicited ſleep by all the means before deſcribed: he endeavoured to ſooth and comfort the mind by hope, and by ſuch amuſements or employments as entertained them in health, and either by gentle flattery, or by compuiſion, to divert their thoughts to other objects. Sudden terror and ſurprize are ſometimes beneficial. In every caſe, exerciſe is neceſſary and uſeful. In the furious madneſs, eſpecially, the diet ſhould be meagre. On the recovery of reaſon, they ſhould viſit another climate, and annually travel. In caſes of bites from mad animals, Celſus, and almoſt all the ancients, are unanimous in burning over the wound with a hot iron, ſo as to keep an open ulcer and diſcharge for a conſiderable time after the injury;

and in the laſt deſperate ſtage of this diſeaſe, when Hydrophobia threatned, he adviſed, on ſome occaſions, ſudden immerſion in cold water, or in the Sea.

In the Sciatica, after frequent and ineffectual frictions over the ſeat of pain, of acrid applications and of cupping-glaſſes, his laſt reſource was the hot iron.

In his Surgery, all the improvements from Hippocrates to his own days are collected, the moſt minute and trifling diſeaſes are not omitted. An eminent Surgeon, of the Moderns, emphatically exhorts every perſon in that profeſſion, "to "keep Celſus in his hands by day and by night." He deſcribes the ſigns of a fractured ſcull, the method of examining for the fracture, of laying the Skull bare, by an inciſion in the form of the letter X, and afterwards of cutting away the angles, and of applying the Trepan, with the ſigns of danger and of recovery. He obſerved that ſometimes, though very rarely, a fatal concuſſion of the brain might happen, the blood-veſſels within the ſcull being burſt, yet the bone remaining entire. After the operation of the trepan, ſpunges and cloths wet in vinegar, and ſeveral other applications were made to the head, and, throughout, ſevere abſtinence was enjoined. In violent fractures of the ribs, he ordered veneſection; low diet; to avoid paſſions of mind, loud ſpeaking, motion, and every thing that might excite coughing or ſneezing; cloths wet in wine, roſes and oil, and other applications were laid over the fracture. The cure of fractures, in the upper and lower extremities, he ſaid were nearly alike; that fractures differ in degree of violence and danger, in being ſimple or compound, that is, with or without a wound of the fleſh, and in being near to the joint: he directs the extenſion of the member by aſſiſtants, the reduction, by the Surgeon's hands, of the fractured bones into their natural ſituation, and to bind the fractured part with bandages of different lengths, previouſly dipped in wine and oil; on the third day freſh bandages are to be applied, and the fractured member fomented with warm vapour, eſpecially during the Inflammation. Splints, if neceſſary, are to be applied, to retain the bones in a fixed poſition. The fractured arm is to be ſuſpended in a broad ſling hung round the neck: the fractured leg is to be incloſed in a kind of caſe, reaching above the ham, and accommodated likewiſe with a ſupport to the foot, and with ſtraps at the ſide, to keep the leg ſteady: in the fractured thigh bone, the caſe is to extend from the top of the hip to the foot. He deſcribes the method of treating compound fractures, and of removing ſmall fragments or ſplinters of bones; and the manner of extracting darts. In luxations of the ſhoulder, he mentions ſeveral methods of giving force to the extenſion, and of replacing the diſlocated bone. One method ſimilar to Hippocrates was, to ſuſpend the patient by the arm, the fore part of the ſhoulder, at the ſame time, reſting upon the top of a door, or any other ſuch firm fulcrum. Another method was to lay the patient ſupine, ſome aſſiſtants retaining the body in a fixed poſition, and others extending the arm in the contrary direction, the Surgeon, in the mean time, attempting, by his hands, forcibly to reduce the bone into its former place.

If a large inflammation was expected to enſue after a wound, it was ſuffered to bleed for ſome time, and blood was drawn from the arm. To wounds, accompanied with conſiderable hæmorrhage, he applied a ſpunge, wet in vinegar, and conſtant preſſure: if neceſſary, from the violence of the hæmorrhage, ligatures were made around the Veſſels, and ſometimes the bleeding orifice was ſeared up with the point of a hot iron. On the third day freſh dreſſings were applied. In conſiderable contuſions, with a ſmall wound of the fleſh, if neither nerve nor blood-veſſel prevented, the wound was to be enlarged. Abſtinence and low diet, in all ſuch accidents, was preſcribed; cloths wet with vinegar, and ſeveral other applications, were directed to the inflamed part. He obſerves, that freſh wounds may be healed without compound applications: Hippocrates uſed a piece of dry ſpunge, and condemned greaſy ingredients. In external gangrene, Celſus cut into the ſound fleſh, and when the diſeaſe, in ſpite of every effort, ſpread, he adviſed extirpation of the member. After cutting to the bone, the fleſh was then ſeparated from it, and drawn back, in order to ſave as much fleſh as poſſible to cover the extremity of the bone. Celſus, though extremely diffuſe in the deſcription of Surgical diſeaſes, and of various remedies and external applications, yet he is nearly ſilent on the method and proceſs of extirpating members; from which, comparing his treatiſe with the modern ſyſtems, we might infer, that the operation was then ſeldomer practiſed than at preſent. He deſcribes the ſymptoms of that dangerous inflammation, the Carbuncle, and directed immediately to burn or to corrode the gangrened part. To promote the ſuppuration of Abſceſſes, he ordered Poultices of barley-meal, or of marſh-mallows, or the ſeeds of linſeed and fenugreek. He alſo mentions the compoſitions of ſeveral repellent cataplaſms. In that ſuperficial inflammation called the Eryſipelas, he applied ceruſs, mixed with the juice of Solanum, or night-ſhade. Sal ammoniac was ſometimes mixed with his plaſters.

He is very minute in deſcribing diſeaſes of the Eyes, Ears and Teeth, and in preſcribing a multitude of remedies and applications. In Inflammation of the Eyes, he enjoined abſtinence and low diet, reſt, and a dark room: if the inflammation was violent, with great pain, he ordered veneſection, and a purgative; a ſmall poultice of fine flower, ſaffron, and the white of an egg, to be laid to the forehead to ſuppreſs the flow of pituita, the ſoft inſide of warm white bread, dipped in wine, to be laid to the eye; the poppy and roſes were alſo added to his Collyriums, and various ingredients too tedious to enumerate. In chronic watery defluxions of the eyes,he applied aſtringents, cupped the temples, and burnt the veins over the temples and forehead. He couched cataracts, by depreſſing the chryſtalline Lens to the bottom of the orbit. Teeth, looſened by any accident, he directs, after the example of Hippocrates, to be faſtened with a gold thread to thoſe adjoining on each ſide. Previous to drawing a tooth, he ordered the gum to be cut round its neck: and if the tooth was hollow, it was to be filled with lead before extraction,to prevent its breaking by the forceps. He deſcribes not only the inflammation, but likewiſe the elongation of the Uvula: he alſo deſcribes the Polypus, and ſome other diſeaſes affecting the Noſe.

He deſcribes ſeveral ſpecies of Herniæ, or Ruptures, and alſo the Hydrocele or dropſy of the Scrotum, and the manual aſſiſtance required in thoſe complaints. After the return of the inteſtines into the abdomen, a firm compreſs was aplied to that part of the groin through which they protruded, and was ſecured by a bandage round the loins. In ſome caſes, after the return of inteſtinal ruptures, he diminiſhed the quantity of looſe ſkin, and formed a cicatrix, ſo as to contract over the part, to render it more rigid and capable of reſiſting. He deſcribes various diſeaſes of the genital parts, a difficulty of Urine, and the manner of drawing off the water by a Catheter; the ſigns of Stone in the bladder, and the method of ſounding or feeling for that Stone. Lithotomy was at that time performed by introducing two fingers into the Anus, the Stone was then preſſed forward to the Perinæum, and a cut made into the Bladder, and by a crooked inſtrument made in a particular form, the Stone was extracted. He deſcribes the manner of performing this operation on both the ſexes, of treating the patient, and the ſigns of recovery and of danger. Hippocrates had even ventured to cut into the kidney, either to give a diſcharge to abſceſſes or to extract ſtones.

Celsus directed various corroſive applications and injections to Fiſtulas, and in the laſt extremity opened them to the bottom with a knife, cutting upon a grooved inſtrument or conductor. In old callous Ulcers, he made a new wound by either cutting away the hard edges, or corroding them with verdigreaſe, quick-lime, alum, nitre, and with ſome vegetable Eſcharoticks. He mentions the ſymptoms of Caries in the bone, directs the bone to be laid bare, and to be pierced with ſeveral holes, or with the trepan, or to be burnt or raſped, in order to promote an exfoliation of the corrupted part; afterwards to apply nitre and ſeveral other ingredients. One of his applications to a Cancer was Auripigmentum or Arſenick. He directs the manner of Tapping the Abdomen in the Aſcites, and of drawing blood by the lancet and cupping-glaſſes. His cupping glaſſes ſeem not to have been ſo convenient as the modern: they were made either of braſs or horn, and were unprovided with a pump. He cured Varicoſe veins by uſtion or by inciſion. He gives directions for extracting the dead fœtus from the womb, in whatever poſition it ſhould preſent, and, after delivery, applied to the private parts, ſoft cloths wet in an infuſion of vinegar and roſes. In Celſus' works, there is a great redundance and ſuperfluity of plaſters, ointments, eſcharoticks, collyriums, of ſuppurating and diſcutient cataplaſms, and external applications of every kind, both ſimple and compound: perhaps, amongſt the multitude, there are a few uſeful remedies now laid aſide and neglected.

His Anatomy is principally confined to a ſhort deſcription of the internal viſcera, and of the bones and articulations: the Oſteology is by far the moſt perfect.

It is impoſſible to abridge this illuſtrious Author: his book is a perfect abridgement, refined in moſt places from all extraneous or uſeleſs matter. Thoſe who want to be informed of his merit, muſt conſult the original. His ſtile is neat, nervous, and conciſe, few technical terms pollute his page, and each diſeaſe is deſcribed by a ſmall number of eſſential ſymptoms. This is a golden rule, which, we have great reaſon to lament, has been too little attended to by Medical Authors. As a Claſſical Latin Writer, Celſus holds the rank in Medicine, that Tacitus, Livy, or Cæſar are honoured with in hiſtorical compoſition. I ſhall cloſe my feeble eulogy with a ſpecimen of his

common ſtile, and at the ſame time, an excellent lecture upon the means of preſerving health.

“ Sanus homo qui et bene valet, et ſuæ ſpontis eſt, nullis obligare ſe legibus debet, ac neque Medico, neque iatroalipta egere: hunc oportet varium habere vitæ genus, modo ruri eſſe, modo in urbe, ſæpiuſque in agro: navigare, venari, quieſcere interdum, ſed frequenter ſe exercere: ſiquidem ignavia corpus hebetat, labor firmat: illa maturam ſenectutem, hic longam adoleſcentiam reddit. Prodeſt etiam interdum balneo, interdum aquis frigidis uti: modo ungi, modo ſe ipſum negligere: nullum cibi genus fugere, quo populus utatur: interdum in convictu eſſe, interdum ab eo ſe retrahere: modo plus juſto, modo non amplius aſſumere: bis die potius quam ſemel cibum capere: et ſemper quam plurimum dummodo hunc concoquat. Sed ut hujus generis exercitationes cibique neceſſarii ſunt, ſic Athleteci ſupervacui. Nam et intermiſſus propter aliquas civiles neceſſitates ordo exercitationis corpus affligit; et ea corpora quæ more eorum repleta ſunt, celerrime et ſeneſcunt et ægrotant. Concubitus vero neque nimis concupiſcendus, neque nimis pertimiſcendus eſt: rarus, corpus excitat, frequens, ſolvit. Cum autem frequens non numero ſit, ſed natura, ratione, ætatis et corporis, ſcire licet eum non inutilem eſſe, quem corporis neque languor, neque dolor ſequitur.”

Dioscorides, of Cilicia, wrote expreſsly on the Materia Medica, and enumerates all the ſimples and drugs then uſed in Medicine: he lived during the reign of Nero and Veſpaſian, and had travelled to many kingdoms to acquire a knowledge of plants. This Author divides the Materia medica into three claſſes, Plants, Animals and Minerals: he mentions the places where they may be found, the manner of preparing and preſerving the medicinal ſimples, and the efficacy aſcribed to them in the cure of diſeaſes, and in his progreſs makes frequent alluſions to his predeceſſors, many of whoſe works are now loſt: his five books are come down to us entire. Theophraſtus had deſcribed the few plants then known (between 5 and 600) chiefly as a Botaniſt; but even in Dioſcorides the qualities and medical effects of ſimples are vague and incorrect. One plant he ſays is good to promote urine, without attending to the diſeaſe, and many other circumſtances neceſſary to determine the propriety of its adminiſtration: we are often alſo embarraſſed to know what plant is meant by Dioſcorides's deſcription, which is extremely ſuperficial. This difficulty is increaſed by the names of many plants and minerals being afterwards changed, and by the ſame plant being called by different names. Some modern Authors, hereafter to be mentioned, have aſſiſted to decypher thoſe difficulties. Dioſcorides muſt not be read in the original, but either with

Jn. Bauhine's Commentary, or that of Fabius Columna: Saumaiſe is alſo an able critic on this ſubject. Notwithſtanding many defects and inaccuracies, Galen allows that Dioſcorides wrote better upon the Materia Medica than any who preceded him.

We have ſeen that ſome of the Metals, Ceruſs, Litharge, Verdigriſe, burnt Antimony, and Cinnabar were then uſed in plaſters and external applications only: Quickſilver was conſidered as a poiſon. A few earths and ſal-ammoniac (different from the preſent ſalt of that name) and foſſil ſalts were given internally. Bituminous, nitrous, and ſulphureous mineral waters were preſcribed in baths, and to be occaſionally drank, as may be ſeen in Pliny and Galen.

Medicines were then, as at this time, prepared in various forms. In their "Formulæ Medicamentorum," we find powders, pills, troches, electuaries, the infuſion of plants and fruits, their expreſſed juice, and decoctions, gargariſms, errhines, ſinapiſms, collyriums, ſuppoſitaries, peſſaries, tents, unguents, cataplaſms, plaſters, cerates, &c. Royal compoſitions and antidotes were in great repute. They had antidotes and recipes not only againſt poiſons and venomous bites, but to cure various diſeaſes. Nero's Archiater invented that celebrated but abſurd compoſition, called after him, Theriaca Andromachi: it was intended as an improvement upon the antidote of the unfortunate Aſiatic prince, Mithridates, who was dethroned by Pompey. Mithridates's antidote conſiſted of 36 ingredients only aromaticks, ſpices and gums, and amongſt the principal gums, Opium. Vipers were added by the Romans, together with 24 new ingredients. Several of the Roman Emperors had this ſuppoſed antidote againſt diſeaſes and poiſons prepared in their palaces; and, at preſent, the Theriac, lopped, it is true, of many ſuperfluities, maintains a place in the Pharmocopæias and ſhops; it was adminiſtered by the Ancients in a variety of diſorders. Pliny, with his uſual cauſtic raillery, ſays, that ſuch a confuſed jumble of drugs were heaped together, "ad oſtentationem artis." Vipers were then preſcribed by many Phyſicians, in obſtinate ulcers, foulneſs of the ſkin, and leproſy, in waſting of the fleſh, and as antidotes againſt poiſons: they were prepared either in broth, jellies, or vinous infuſions, or roaſted as we do eels. Aſſafœtida, that ill-ſcented gum, which the Germans call, Stercus diaboli, was in uſe with the ancients, and was an ingredient in ſeveral of their ſauces and ragouts. Unguents and coſtly perfumes, thoſe childiſh and diſguſting inventions of luxury and depraved taſte, the Romans carried to an extravagant height: they were compoſed of various odoriferous plants, flowers, gums, or reſins infuſed in oil, of caſtor, amber, cinnamon, and other aromaticks.

Pliny, the naturaliſt, a Genius diſtinguiſhed by eminent talents and high rank, though no Phyſician by profeſſion, wrote many Chapters on the Origin and Hiſtory of Medicine, and on Materia Medica, and Pharmacy. He propoſed to condenſe into one Treatiſe, the obſervations of Theophraſtus and Dioſcorides. His natural hiſtory and epitome of Ariſtotle is univerſally known. Eager to attain knowledge and univerſal erudition, he collected from all the writers of antiquity, and publiſhed ſome miſcellaneous reflections on Meteors, Aſtronomy, Comets, Eclipſes and Earthquakes. To rear up ſo extenſive an edifice, he was under the neceſſity of truſting many things to the information and teſtimony of others; and, amongſt many important truths, are intermixed a number of errors and fabulous trifles. He declared himſelf againſt the dogmatic and conjectural Sects, and againſt Royal compoſitions and compound medicines: to heap together, ſays he, a number of ſimples in ſcruples, is a proof of remarkable impudence, and an invention of the ſhops for avaricious gain. Wine he termed the blood of the earth, the moſt grateful and exhilerating cordial in nature. The ancient Romans, during their ſplendor, cultivated the Vine with peculiar induſtry and care; and at one time they could reckon up eighty different ſorts of wine, the produce of the grape.

Galen, P. C. 160, the laſt Author of diſtinction who practiſed Medicine at Rome, is a man, upon whoſe character and writings I muſt dwell for ſome time. He reigned during a great number of centuries over Phyſic, as an inſpired Prophet, or a Pope gives laws in Religion. Galen was univerſally appealed to, as a monarch and an oracle: he was ſuppoſed to have brought every part of Medicine to perfection, and his ſyſtem credited as infallible. Phyſicians did little more than copy, or write dull commentaries upon ſome parts of his voluminous works, many of which are now loſt; but at preſent Galen's writings amount to ſix volumes in folio. This Author was born at Pergamus, in the Leſſer Aſia, and had travelled to many kingdoms for inſtruction, amongſt the reſt, to the renowned ſchool of Alexandria in Egypt, where he reſided ſeveral years, in the proſecution of Medical ſtudies. About one hundred and ſixty years after Chriſt, and at the age of thirty-two, he arrived at Rome, where his fame and knowledge procured him admirers and patrons amongſt men of rank; and as he ſays, from that diſtinction, a number of envious rivals and enemies in his own profeſſion. The Emperors Marcus Aurelius, and Lucius Verus, conferred particular favours upon him: he had the good fortune to cure the former Emperor of a dangerous diſeaſe, and by his own relation of that lucky circumſtance, received ſome flattering compliments from the Roman Sovereign.

At the time of Galen's appearance in Rome, all the other ſects, the Dogmatic, Empiric, Methodic, Epiſynthetic, Pneumatic, and Eclectic ſubſiſted: theſe were again ſplit into parties, and not entirely agreed what leader to follow. Galen's ſyſtem gained the aſcendant over all the others: he declared himſelf of no party in Medicine; on the contrary, he appears to have held all the rival ſects in great contempt: the Methodics he called the Aſſes of Theſſalus. The Empirics began by degrees to degenerate into mere quacks, adminiſtering medicines, however powerful, without reaſon or judgement; and with all the other ſects, gradually ſunk into contempt and oblivion.

Galen boaſted publickly in his writings, of his ſuperior knowledge in Medicine, and in many inſtances aſſumed a magiſterial authority, and illiberal ſuperciliouſneſs. "I have, (ſays he, in a fulſome ſtrain of perſonal adulation,) done as much to Medicine, as Trajan did to the Roman Empire, in making bridges and roads throughout Italy. It is I alone that have pointed out the true method of treating diſeaſes: it muſt be confeſſed, that Hippocrates has already chalked out the ſame road, but as the firſt diſcoverer he has not gone ſo far as we could wiſh; his writings are defective in order, in the neceſſary diſtinctions; his knowledge in ſome ſubjects is not ſufficiently extenſive; he is often obſcure after the manner of the ancients, in order to be conciſe; he opened the road, another muſt render it paſſable." All theſe defects in Hippocrates, Galen undertook to repair, and to ſupply new materials. The former is his model in many inſtances, and upon whoſe works he has written a variety of elaborate commentaries. Galen plumes himſelf upon being the firſt who eſtabliſhed a juſt and rational method of treating and teaching Medical ſubjects. He compares a Phyſician to an Architect, who ſhould know all the parts, even to the moſt minute, that compoſe a houſe: the Phyſician muſt likewiſe learn the actions and particular functions of each part, compoſing the human body: this is enforcing the ſtudy of Anatomy and Phyſiology.

His theory of the four elementary principles, was originally the offspring of the Greek Philoſophy, and is in reality the echo of Hippocrates. Fire, air, earth and water, were ſuppoſed the elementary bodies of all nature, and the four elementary humours of the human body: analogous to theſe were blood, pituita, yellow, and black bile. The qualities of theſe elements were ſaid to be heat, cold, moiſture, and dryneſs, and diſeaſes to enſue, upon either any exceſs or any depravity of the fundamental humours. He drew the outlines of the four ſuppoſed great claſſes, or elementary temperaments of the human race, the ſanguine, the phlegmatic, the atrabilarian, and the melancholic: theſe were again ſubdivided by him into many more of a mixed kind, and to theſe he added temperaments peculiar to certain individuals.

He divided the component parts of the body into ſolids, fluids, and ſpirits; the humours into blood, pituita, yellow and black bile: the functions of the body into natural, vital, and animal. The natural were ſubſervient to digeſtion, nutrition and generation: the vital to the heart and reſpiration, and conveyed life and heat: the animal, the moſt noble of all was lodged in the brain, on this the internal and external ſenſes depended.

He ſcrupulouſly examined the effects and abuſe of what are perhaps improperly termed the Non-naturals, and which, when well regulated, tend materially to preſerve health: ſuch are the air we breathe, food and drink, motion and reſt, ſleep and watching, retentions and excretions of the body, and paſſions of mind. Theſe are alſo by Galen called, procatartic cauſes, becauſe they put into motion the antecedent, which may be either plethora, or depravity of the elementary humours. Hippocrates alledged that air in the blood-veſſels was the cauſe of ſome Nervous and Spaſmodic diſeaſes.

A DISEASE, according to Galen's definition, implied an inability to perform the functions of the body, as in health. His claſſification of diſeaſes is analogous to that of Hippocrates; he parcelled them into epidemic, endemic, ſporadic, ſhort, long, benign, malign, and many other diviſions unneceſſary to be recapitulated. The ſymptoms of diſeaſes, he termed "affectiones contra naturam," which depended upon the diſeaſe, and accompanied it as a ſhadow does the body: they were of three different ſpecies, the action of certain parts injured; the qualities of parts changed; faults in the excretions and retentions. Thus, bad digeſtion is a ſymptom of the natural action of the ſtomach and inteſtines being impaired; fainting, of the heart and vital; apoplexy of the brain, or animal functions.

Faults in the retentions and excretions, are indicated in the ſtools, urine and other outlets.

AGAIN, he ſeparated the ſymptoms of diſeaſes into two heads; the diagnoſtic and prognoſtic. The diagnoſtic were afterwards ſplit into pathognomonic and adjoint. The pathognomonic ſigns ſerve to diſtinguiſh one diſeaſe from another, they begin, accompany, and terminate with the diſeaſe: the adjoint on the contrary, are common to ſeveral diſeaſes. For example, in the pleuriſy, a cough, difficulty of breathing, pain of the ſide, and conſtant fever, are pathognomonic ſymptoms; but the ſpitting of divers colours, an adventitious ſign. The diagnoſtic ſigns of diſeaſes were taken from the action of parts injured, from the cauſes known to excite ſuch diſeaſes, from the pulſe, and from the various excretions. External diſeaſes and accidents he left to be diſcovered principally by the ſight and touch.

A KNOWLEDGE of the different functions of the body, ſays Galen, ſerves to diſcover the diſeaſed organ: thus a difficulty of digeſtion is an indication that the ſtomach is affected: a difficulty of paſſing urine ſhews that the bladder, kidneys or other parts contributing to this function are obſtructed: an alteration of the pulſe, ſhews that the heart and arteries are affected: immobility of any part, the nerves. Functions may alſo be injured, not immediately or directly, but by conſent and ſympathy: vomiting may originate from a ſtone in the kidnies, and in that caſe Medicines directed to the ſtomach alone would be nugatory. The degrees of pain alſo indicate the parts which ſuffer: in pungent acute pain, a membranous part is attacked; in pain with convulſions, a nerve.

Diseases are alſo known by the excretions and evacuations. Little pieces of fleſh emitted with the urine, deſcend from the kidneys, but if in ſmall ſcales, like bran, from the bladder: blood iſſuing from a veſſel or outlet, in an unequal current, and violent ſtarts burſts from an artery: blood coughed up ſhews, that a veſſel of the lungs is ruptured; and when mixed with matter or pus, indicates an ulceration in the ſame organs: the colour of the ſkin changed to a deep yellow, as in jaundice, is a ſign that the bile is obſtructed. Galen has written ſeveral chapters or books, expreſsly to determine the ſeat of different diſeaſes, which may be rank'd amongſt the moſt ſelect parts of his works.

From the cauſes of diſeaſes, continues this Author, we are furniſhed with matter to determine the individual nature of each. From Plethora and Cacochymia of the humours he derived many diſeaſes. There might, according to his ſyſtem, be a plethora of all the four humours; but if the two Biles or Pituita notably exceeded their juſt proportion, it was called Cacochymia, becauſe the blood was by that means corrupted: theſe humours might alſo be in a ſtate of cacochymia merely from degeneracy of their primary qualities.

The predominant features of the four primary elements were thus diſtinguiſhed. Sanguine plethora (moiſt and warm) is indicated by a plumpneſs of the fleſh, an unuſual enlargement of the body, the veſſels are turgid, pulſe ſtrong, reſpiration not entirely free, with drowſineſs and diſturbed dreams, ſometimes eruptions of blood burſt from the noſe or other outlets. Plethora is further known by the cauſes which tend to produce it; ſuch are a ſedentary life, nouriſhing food, interrupted exerciſe, or ſome habitual evacuations ſtopped.

Bilious cacochymy (warm and dry) is known by a jaundiced colour of the ſkin, eyes, or tongue, bitterneſs of the mouth, thirſt, diſguſt, nauſea, and diſcharge of bile by the anus, or by vomiting, hunger is ſupported with difficulty, the pulſe is quick, the temper lively and choleric. A warm dry temperament, ſummer, youth, hot climates, labour, exerciſe, watching, abſtinence, paſſion, and diſguſt all diſpoſe to it.

Melancholic cacochymy (cold and dry) or black bile is manifeſted by depraved or unnatural cravings, flatulency, ſadneſs, fear and taciturnity, by hemorroids, black-jaundice, varix, leproſy and cancer. Autumn, middle age, cold and dry temperaments, groſs nouriſhment, grief, and chagrin, all pre-diſpoſe to the melancholic temperament.

Pituitous cacochymy (cold and moiſt) appears by paleneſs, dead-coloured fatneſs, and coldneſs of the ſkin to the touch; the pulſe weak, ſlow and ſoft; the urine white or pale; with defluxions, catarrhs and edematous tumours: ſuch temperaments are eaſily affected by cold, they are engendered in cold moiſt climates, and increaſed by crude watery food, ſloth, ſedentary life, and exceſs of ſleep.

He diſcuſſes the prognoſtic ſigns, which indicate the future criſis, and final iſſue of diſeaſes: Theſe equally with the diagnoſtic are principally collected from the natural, vital and animal functions, from the excretions, from the qualities of parts changed, and from the critical days. When the diſeaſe is known, it leads us to apprehend the event. Thus, a malignant Fever is always dangerous; intermittents commonly terminate favourably; a great inflammation is more dangerous than a ſmall one; the danger is alſo increaſed by the importance of the diſeaſed organ in ſuſtaining life. The cauſe of the diſeaſe, the age, ſex, climate, ſeaſons of the year, and degrees of injury in the functions and excretions, all aſſiſt to direct the prognoſtic. There are in this author an infinite number of important prognoſtic obſervations, and commentaries on thoſe of Hippocrates.

Galen is the firſt medical author, after Eraſiſtratus and Archigenes, who attended minutely to the pulſe in diſeaſes: Hippocrates and Celſus, for reaſons already given, truſted more to the manner of reſpiration. Galen wrote ſeventeen chapters upon the different pulſes, and the indications which they furniſhed in diſeaſes: a few of thoſe diſtinctions will ſerve as a ſpecimen of his ingenuity. There are the ſimple, compound, long, large, elevated, quick, frequent, vehement or ſtrong, ſlow, weak, ſoft, hard, equal, unequal, intermittent, dicrotus or double ſtroke, undulating, trembling, convulſive pulſes, &c. He attempted to account for the cauſes of theſe different pulſes, dividing them into primary and ſecondary. A ſtrong pulſe indicates ſtrength of the heart and arteries; a ſoft pulſe, relaxation of the arteries; a hard pulſe, tenſion and ſtricture; he added, that age, ſex, temperament, and change in the non-naturals, make alterations in the pulſations. Many of the minute diſtinctions reſpecting the pulſe, exiſted in Galen's brain only; at leaſt many of the cauſes, and of the prognoſtics built upon them are extremely ſuſpicious. Galen even confeſſes the impoſſibility of diſtinguiſhing all theſe different pulſes, by ſaying, it would require the life of one man to learn them perfectly. We know that the pulſe is altered by the ſlighteſt cauſes in diet, drink, or paſſions of the mind, and even at different times of the day is quicker and ſlower. Galen is equally ſubtile on the various appearances and changes in the urine, and the indications and preſages to be drawn from this evacuation in diſeaſes.

In every diſeaſe he ſaid there were "*tres affectiones contra naturam*;" the diſeaſe, the cauſe, and the ſymptom. The principal diſeaſe, which is the cauſe of all the other ſymptoms, ſhould be the conſtant object of the Phyſician's attention, and of his remedies; except when a ſymptom is very violent and threatens danger, then we muſt deſert the original diſeaſe for a time, and endeavour to remove this alarming ſymptom. In the prevention of diſeaſes, the cauſes are principally to be avoided or removed. In the cure and prognoſtics of diſeaſes, many circumſtances are to be weighed together, and from a general view proportionate remedies adminiſtered: we are alſo to regard the ſtrength, age, temperament, habit, the nature of the organ affected, whether tender or delicate, as the eyes; or of immediate moment to life, as the brain and lungs.

FROM the days of Hippocrates to thoſe of Galen, the liſt of remedies, more eſpecially of compound preſcriptions, was enormouſly accumulated: in other reſpects, his practice is founded upon that of Hippocrates, whoſe doctrine of the critical days he defends. Galen wrote diffuſively on the Materia Medica and compoſition of drugs. Many of his preſcriptions, recipes, and antidotes, collected from various Authors, are made up of a rabble of diſcordant ingredients, and are now expunged from our modern Pharmacopæias. All the properties and virtues which he attributed to medicines, are derived from their ſuppoſed elementary qualities, heat, cold, moiſture, and dryneſs. Each of theſe qualities was again ſubdivided into four degrees; and a plant or medicine was ſaid to be cold or hot in the firſt, ſecond, third, or fourth gradation. If the diſeaſe was hot or cold in any of thoſe four ſtages, a medicine, poſſeſſed of a contrary quality, and in the ſame proportionate degree of elementary heat or cold, was preſcribed. Saltneſs, bitterneſs, and acridneſs of bodies depended, in his ideas, upon heat, or dryneſs. He bled rather oftner than Hippocrates, but never children under fourteen years of age: the quantity drawn, was proportioned to the diſeaſe and ſtrength, and never exceeded eighteen ounces, nor was leſs than eight. Errors, he ſaid, had better be committed on the ſafe ſide. He bled to diminiſh Sanguine plethora, and purged to evacuate Cacochymia. Galen opened the jugular veins, and ſometimes performed arteriotomy at the temples; and he directed leeches, ſcarification, and cupping-glaſſes to draw blood. To force ſweats, he ſeldom employed internal medicines, the Theriac excepted, but had recourſe to baths or frictions. Hippocrates makes no mention of internal ſudorificks. Galen made frequent uſe of Anodynes, or of compoſitions in which opium was an ingredient, to eaſe pain, check inordinate evacuations, or procure ſleep. His laboured reflections on the choice and regulations of diet, from infancy to old age, and in different ſeaſons of the year, and in health and ſickneſs, are copied by moſt ſucceeding writers, and are not inferior to any part of his works. He ſcrutinized almoſt every ſort of aliment, and the effects of it in digeſtion and concoction, and in his rules for preſerving health he alſo expatiates largely upon exerciſe, baths, frictions, evacuations, &c. Several of his Surgical works, and commentaries on the Surgery of Hippocrates are preſerved: he deſcribed with accuracy the different ſpecies of Herniæ or Ruptures, and ſeems to have practiſed the Surgical art together with Medicine.

Whether Galen ever regularly diſſected human bodies, is doubtful. At Rome, a delicacy and ſuperſtition was entertained by the people, in reſpect to violating the bodies of the dead, and they approached a corpſe with horror: numbers were burnt after death. Phyſicians by accident, ſays Galen, may procure the body of a robber killed in the highway, of enemies ſlain in the field of battle, of malefactors condemned to the wild beaſts, or of young infants expoſed in the ſtreets, a cuſtom, hiſtorians report, not unfrequent amongſt the indigent Romans, when taxes became inſupportable: ſuch wretched objects alone were permitted to be diſſected. To popular abhorrence were added, ſevere penalties and puniſhments upon any one who ſhould violate the corpſe of the dead. This law was enacted in conſequence of the domeſtic murders, and other horrid cruelties committed by the furious factions of Marius and Scylla. Galen adviſes, firſt to practiſe the diſſection of apes or monkies; and that if in the wars with the Germans, or by any other accident, phyſicians ſhould find human ſubjects for diſſection, they will be more expert and ready to diſtinguiſh the different parts in man. He often deſcribes parts of the ape or monkey, ſuppoſing them to be analagous to thoſe in man. He tells us that he had diſſected many ſpecies of the brute creation, and amongſt them, monkies and apes; animals, we muſt allow, that in external make, and ſtill much more in their internal ſtructure, are rude imitations of man: on ſome occaſions, perhaps, an anatomiſt or a moraliſt would be puzzled to find out the ſuperiority. Even at Alexandria, that famous city, which yielded, with reluctance, the precedence to her ſovereign Rome, and the medical ſchool to which Galen recommended ſtudents to travel for inſtruction, they had only at this time dried ſkeletons to inſpect: the reſt of the anatomical courſe was probably finiſhed upon the animals juſt mentioned.

GALEN's anatomical works are very voluminous: they contain many diſcoveries of his own, and of his predeceſſor Marinus, and diſplay, beyond all compariſon, the moſt perfect and maſterly anatomical portrait of the human body, and phyſiology of its different functions to be met with in antiquity. In them we may trace a deſcription, by no means contemptible, of the bones, ligaments, cartilages, muſcles, and ſkin; of the blood-veſſels; of the brain and nerves, and their membranes; of the eye, its coats and humours; and of all the external organs of ſenſe, and the nerves with which they are ſupplied, and of the vertebral nerves; of the trachea arteria, lungs, heart and diaphragm; of the œſophagus, ſtomach, and inteſtines; of the liver, gall bladder, ſpleen, and pancreas; of the kidnies, ureters, and bladder, and of the organs of generation in both ſexes: he is the firſt who diſſected a conſiderable number of the muſcles, and who demonſtrated their figure, ſituation and direction, but was ignorant of their fabric. Galen knew of that obvious motion perceptible in the heart, its ſyſtole and diaſtole, and that the arteries and veins contained red blood, and he ſeems not to have been ignorant of the leſſer circulation through the lungs, and of the communication between the auricles, and the ventricles of the heart, in a fetus before birth; but the general rotatory circulation through the body, continued many centuries after a profound ſecret. Galen imagined, that from the lungs the heart was ſupplied with the ſubtile and pure part of the air, which contributed to cool the blood, that the blood and air contributed conjointly to form the animal and vital ſpirits, and that the ſuperfluous or groſs part of the air, after ſerving the important function of the voice, was, together with groſs fumes from the blood, diſcharged by the breath, and a part by the pores of the ſkin. He imagined that the chyle was abſorbed into the liver, and there concocted into blood; that the bile was an excrementious fluid from the blood, but which ſerved at the ſame time to ſtimulate the inteſtines to expel the fœces; and that the black bile, or groſs dregs of the blood, was ſeparated from the ſpleen. To the nerves, he aſſigned their proper uſe of ſerving as primary inſtruments of ſenſe, and of motion. Numbers of the preſent anatomical terms are copied from Galen.

I HAVE found it no eaſy taſk to contract into miniature, the immenſe maſs of Galen's writings, ſyſtem and improvements in medicine. To have done it with ſufficient juſtice to the author would require, inſtead of one ſmall chapter, or rather a few pages only, ſeveral large volumes. We obſerve that Galen has attempted to deſcribe the ſtructure of the human body, and to explain its functions; to inveſtigate the cauſes of diſeaſes, their manner of operation; the names, compoſition and virtues of drugs; and laſtly, the ſcience of diagnoſtics and prognoſtics, and of remedies. Under theſe different branches are included anatomy, phyſiology, pathology, materia medica, and the practice of phyſick. No part of medicine, as it is now at leaſt taught in the ſchools, was left untouched by him, medical chymiſtry and Natural philoſophy excepted, which for ages after continued to be unknown. His anatomy and phyſiology, though deformed by many errors, prevented a great deal of labour to the moderns, and put them forward in this ſcience. He re-eſtabliſhed the ſtudy of Hippocrates, and pointed out the clew, to arrive at medical knowledge, not, I confeſs, always by example and experiment, but to ſtudy it with more advantage than formerly, to place the ſcience upon a rational foundation, and to extend its limits. Galen, it is true, often loſt his way, and was bewildered in ſubtleties; but even his errors ſtirred up a curioſity for inveſtigation, when learning and philoſophy were revived in Europe. As a proof of thoſe ſentiments, which to ſome may appear ill-founded, medicine is now taught at moſt univerſities upon the outlines and vaſt range of the Galenic plan. Galen muſt be allowed to have furniſhed the moſt compleat original drawing, though deformed and incorrect in all its parts. His comments upon the Authors and Medical practice of antiquity, makes us feel leſs regret for the deſtruction of the originals. Unfortunately for Galen, materials were not in his days, collected to build any permanent ſyſtem: but when deficient in facts and experiment, he poſſeſſed a warm Aſiatic imagination, and abundant invention to fill up the chaſm with conjectures. He did not trouble himſelf to philoſophize in that cloſe wary tract, purſued by our modern Locke, from eſtabliſhed facts; many of his fine ſpun theories, reſt like the fairy caſtles upon a baſeleſs fabric of air. Had he lived in modern times, it is probable, that with the talents of a rhetorician, of an eaſy florid writer, and a man of general erudition, all which he is allowed to have poſſeſſed, his ſyſtem would have rivalled either of the two modern compilers Boerhaave or Hoffman. Like Ariſtotle, he ſeems to have been better fitted to digeſt the obſervations of others into ſyſtems, than to build upon his own collection: but experiments and medical diſcoveries are made by ſlow degrees, and Galen had too much vanity, even in the moſt intricate queſtions, to appear ignorant. His theory of the four elements, as applied to the human body, and to the virtues of medicines, is a curious web of philoſophical fiction, a monſter of the fancy, and to ſupport it, he heaps up mountains of caſuiſtry and conjecture. His writings are too verboſe and prolix, and his practical obſervations are obſcured by clouds of ſophiſtry.

In reſemblance of his favourite Ariſtotle, there is a ſuperfluous round of definitions and diviſions, and human patience is often exhauſted in the jargon of terms, refinement and logick.

During one thouſand three hundred years, Galen's ſyſtem gave univerſal laws in medicine, alternately to Europe, to Africa, to part of Aſia, and to the Arabian phyſicians, and wherever the ſcience was cultivated. The ridiculous opinion then, and long after, conceived, that medicine had reached to full maturity, produced the ſame baneful effects of bigotry and ſuperſtition; it checked the advancement of reaſon, the proſecution of natural truths, and new diſcoveries. Galen's long dictatorſhip, however, is to be attributed principally to thoſe general cauſes, which we ſhall ſoon ſee involved Europe in ignorance, and buried all the ſciences equally with medicine, in the aſhes of Rome.

Mr. Le Clerc has enumerated a long roll of phyſicians, principally before, and a few after Galen, who practiſed, and wrote books at Rome. The names and individual hiſtory of each are, in my opinion, of very little importance: even the names of Crater and Alexion, men of the firſt practice in their time, would ſoon have been forgotten, had they not been mentioned by Cicero and Horace; and they might, without any loſs, be ſuffered to ſink with innumerable other proper names, and human memoirs in the gulph of oblivion. Such trivial anecdotes tend only to embarraſs hiſtory.

We are for ſome time to take our leave of mighty Rome, to return back into Greece, which had long continued an humble appendage of Roman ſovereignty. The proud miſtreſs of the world, at the end of the ſecond century, began to ſhow ſigns of internal decline, her conſtitution was unſound, and in a few centuries after, entirely worn out. The ambition of Triumvirs, Tribunes, and Generals, had firſt gradually levelled all the fences of Roman liberty; and anarchy at length terminated in the abſolute authority of the ſubtle Auguſtus. In the three laſt centuries a few additions and improvements were made by ſome diſtinguiſhed Greeks, in medicine and ſurgery: with theſe exceptions, literature and the arts haſtened to decay, throughout the wide dominions of Rome. Civil diſſenſions, and the deſpotiſm of her profligate Emperors, accelerated their downfal. Plato, Ariſtotle and Galen, were now the leaders in ſcience and medicine: Alexandria was the faſhionable ſchool for ſtudy, where men were taught to conſume their time and health, in the moſt profound metaphyſical meditations and verbal diſputes.

Alchymy, a deceitful art, introduced by the Egyptians, had early become an object of ſtudy, and of inſatiable avarice. In the ſecond century, a public edict of the Emperor Diocleſian, commanded, under ſevere penalties, all the books on this ſcience, to be burnt. In the fourth century ſome traces of Alchymy began to revive, and many fruitleſs experiments were made, to change metals into gold. Several Greek writers are recorded by Boerhaave, as employed in this delirious purſuit, after the downfal of the Weſtern Empire; but no ideas ſeem then to have been entertained of diſcovering, by chymical proceſs, any remedies for the cure of diſeaſes. About one thouſand years after the edict of Diocleſian, during the general ignorance of Europe, this ſpecious art of making gold, again met with a favourable reception. Metallurgy, or the fuſing, forging and hammering of metals was practiſed in the remoteſt ages; we may follow it up to Tubalcain and Vulcan, and are at length loſt in fable.

The Greek Writers whom I am about to mention, copied largely from Galen: their anatomy and theory of medicine, was entirely Galenical, and in moſt inſtances, their practice. Oribaſius's (P. C. 360.) great work, called the Abridgement of Medicine, is almoſt throughout a compilation; the principal original obſervations introduced into it are ſome new ſorts of gymnaſtic exerciſe, and the deſcription of a ſpecies of melancholy madneſs, where the inſane perſon frequented church yards and tomb-ſtones.

Ætius, P.C. 500, the compiler of a large volume, treats of more diſeaſes than Oribaſius; the ſymptoms and method of cure are alſo marked at greater length. We meet in him, with many obſervations omitted by Celſus and Galen, particularly on the ſurgical operations, on the diſeaſes of women, the cauſes of difficult labours, and modes of delivery. He takes notice of the worm under the ſkin, a diſeaſe frequent at this day amongſt the African negroes. In ulcers of the bladder, he recommended the internal uſe of hot medicated waters. Ætius ſtudied medicine at Alexandria, and relates ſome ridiculous ceremonies, and ſome ſuperſtitious and empirical practices of the Egyptians, in order to expel diſeaſes.

Alexander Trallianus, P. C. 560, is ſaid to have practiſed at Rome: he is not ſo diffuſe as either of the two former writers, his works have more originality, and will alone ſuffice to give a diſtinct and comprehenſive view of the medical practice in thoſe days. Trallian's ſtile is conciſe, and made up of words in common uſe; diſeaſes are well arranged, and diſcriminated from others which they nearly reſemble, with great ſagacity. Trallian is the firſt who preſcribed Rhubarb in the dyſentery, and Iron to be taken internally in a ſchirrhus of the ſpleen. Since that time, we have found out very powerful remedies from the ſolution of this metal in the Chalybeate waters. In female obſtructions, chronic diſeaſes, weakneſs of the ſtomach and inteſtines, aqueous ſolutions, and other preparations of iron, have often produced the moſt ſalutary effects. In ſome local pains, and even in the gout, Trallian applied Cantharides externally, and directed an abſtemious regimen, with exerciſe. In ſevere nephritic paroxiſms, he bled. In Fevers accompanied with a redundance of Bile, he preferred gentle purgatives to veneſection. He mentions the caſe of a perſon, who diſcharged a tape-worm, twelve cubits in length, which was forced from the inteſtines, by a doſe of Hiera Picra. He deſcribes ſeveral ſpecies of melancholy inſanity, and in the cure, truſted more to purgatives, and ſtill more to diet, baths, exerciſe, travelling and amuſements, than to a jumble of drugs. The hellebore then had fallen into ſome diſrepute. He makes ſeveral new remarks on air, water, baths, exerciſe, and other means to preſerve health. On ſome occaſions he betrays a weak credulity in amulets and charms. Notwithſtanding thoſe faults, there are many excellent obſervations in his book, which is calculated for uſe and practiſe. Surgery and female diſeaſes are omitted by Trallian.

Surgery derives intrinſic information from Paulus Egineta, (P. C. 640:) his treatiſe on the manual operations, is ſuperior to Celſus, and all the other ancients. He directs how to extract darts; to perform the operation ſometimes required in dangerous ruptures or herniæ, where the inteſtines cannot by any other means be returned back; to tie up punctured arteries in the operation for the Aneuriſm. Galen, Paulus, and all the ancients, ſpeak of one ſpecies only of aneuriſm, and define it to be "a Tumour ariſing from arterial blood, extravaſed from a ruptured artery." The aneuriſm from a dilatation of the artery is a diſcovery of the moderns. In violent inflammation of the throat, where immediate danger of ſuffocation threatned, Paulus opened into the windpipe from the neck, a paſſage for the air: in technical language, this is called bronchotomy. In obſtinate defluxions upon the eyes, he opened the jugular veins. He deſcribes the manner of opening the arteries behind the ears, in chronic pains of the head. The orifice of Iſſues and Setons was then made with the hot iron. He wrote on obſtetricks, on difficult labours, and other female diſeaſes. He deſcribes a ſpecies of ſevere cholick, denominated by the moderns Colica Pictonum. He adviſed the uſe of warm medicated waters in the leproſy. Fabricius ab Aquapendente, a celebrated ſurgeon of the ſixteenth century, follows Celſus and Paulus, as text-books: ſome of the moderns, without confeſſing the plagiariſm, have dreſſed up Paulus in a new language, and publiſhed the Greek ſurgery as their own.

ANOTHER Author, remarkable chiefly for his correct Hiſtory of the Plague which broke out at Conſtantinople (P. C. 640.) where he then reſided, is Procopius. This is the moſt dreadful peſtilence on record: it began in the reign of the Emperor Juſtinian, continued, it is ſaid, 52 years, ſpreading from one country to another in ſucceſſion, and almoſt depopulated the earth.

HAVING now attempted to give ſome faint idea of the ſtate of medicine, and of the principal Medical and Surgical writers in the Roman Empire, I ſhall finiſh with a few obſervations on the gymnaſtic medicine and baths, on the ſlaves who are reported to have practiſed Medicine at Rome, and on the title of Archiater.

Exercise, unctions, frictions, and baths occur inceſſantly in the ancient medical writers of Greece and Rome, as remedies to preſerve health, and to remove ſeveral diſeaſes. Herodicus, we have ſeen, firſt introduced this ſpecies of Medicine into Greece; but in Rome thoſe ſpacious and majeſtic buildings, called gymnaſiæ, were not erected before the reign of the Emperors. Vitruvius, the contemporary of Auguſtus, deſcribes the gymnaſiæ of Greece alone; from which, excluſive of other ſtrong proof, we may infer, that no public ſtructures of that nature then ſtood in the Roman metropolis. Aſclepiades ſeems to be the firſt who brought the gymnaſtic medicine and baths into repute at Rome. Numbers of thoſe public fabricks founded by the different Emperors were aſtoniſhingly magnificent, and of almoſt incredible magnitude and capacity: in H. Mercurialis may be ſeen plates and figures of their elevation, form and dimenſions. They contained apartments where exerciſes were performed; apartments for cold, warm, and vapour baths, for frictions and unguents; others were rhetoricians, philoſophers, and phyſicians aſſembled to walk, to converſe, and to diſpute, and where they might give Lectures. Plato and Ariſtotle both taught in the Greek gymnaſiæ.

In the rude ages of Rome, the youth, after the fatigue of military exerciſes, often bathed in the Tyber: refinement, delicacy, and effeminacy introduced covered buildings for ſimilar purpoſes. In the paleſtræ, or roomy quadrangles, alotted to the uſe of exerciſes, youth was initiated into the military Tactics; there too the gladiators and athletæ practiſed, in order to be prepared for the public exhibitions and brutal entertainments of the amphitheatres: here they rode, fenced, threw the dart, the javelin, and the diſcuſs: boxing, wreſtling, running, and military dances alſo made a part of the athletic ſports. The uſual manner previous to ſuch robuſt and vigorous bodily exertions was to ſtrip, the waiſt alone being covered, and to rub themſelves with oil; ſome powder or duſt was afterwards thrown upon them, and aſſiſted in preventing too great a diffuſion of ſweats, and conſequently fatigue; it enabled them alſo to graſp more firmly with their hands made ſlippery by unction: after exerciſing they returned, and were rubbed down with particular inſtruments, or ſometimes with coarſe or ſoft cloths and ſpunges, from the oil, duſt and ſweat; they then entered the bath, and on coming out were again gently anointed, the better ſort with perfumes or ſcented oil, in which various odoriferous ingredients were infuſed, and which ſerved to reſtrain too copious exhalation from the pores. From the bath they generally went to ſupper, which was the principal luxurious meal with the Romans, and was eaten in a reclining poſture. To execute all the different menial offices in the gymnaſiæ, a numerous retinue of ſervants and ſlaves were employed, each of whom had their ſeparate department and duty, and were under the controul of the maſter of the paleſtræ or exerciſes.

NUMBERS came to the gymnaſiæ ſolely for bathing, and occaſionally, perhaps, for frictions. The bath was frequented for health, and as a luxury that they might go to ſupper with a clean ſkin, linen ſhirts being then very ſeldom uſed. Galen complains, that in his time almoſt all claſſes of men bathed daily; every gentleman we underſtand had a private bath at his own houſe, which was ſumptuous and highy adorned. Seneca exclaims, that many even of the inferior ranks would not be ſatisfied unleſs the walls of their private bath were decorated with Alexandrian marble. In the publick cold bath they had room to ſwim: this was a practice very general amongſt the Greeks and Romans. The luxurious, effeminate, valetudinarian, and diſeaſed, generally repaired to the warm bath, except probably in ſultry weather, when warm water could neither be ſo agreeable nor refreſhing. Beſides a warm aqueous bath, there was alſo a ſudatorium for vapour and dry heat to force ſweats. At the Baiæ, recommended by Celſus, a warm vapour aroſe ſpontaneouſly from the earth, and anſwered the intention of a ſudatorium. Cælius Aurelianus ſpeaks of the utility in ſeveral diſeaſes, " locorum natura ſpirantium, quo ſudores moveantur.

Several Roman Emperors maintained public baths at their own expence; but in others the ſum paid for liberty to bathe was ſo trifling, that all the inferior orders of the inhabitants could, when neceſſary, and they had leiſure, indulge in that luxury. The Roman women, probably bathed at home in private: yet in the diſſolute ages of that people, we learn from Juvenal, that women often reſorted to the public baths, intermixing promiſcuouſly with the men, until imperial edicts were iſſued, prohibiting that profligate indecency. A few baths were afterwards erected for the excluſive uſe of the female ſex. Throughout moſt of the Aſiatic countries, and at preſent amongſt ſeveral of the Mahometan nations, bathing the whole body in water is as common as waſhing the hands and face with us. That this practice did not originate from the want of linen or cotton may alſo be doubted, as theſe were manufactured in Egypt and India, in the earlieſt ages of which we have any written memorials. In all ſultry ſcorching climates it is natural for men to repair to a cool bath, both to relieve the burning of the ſkin, and the languor induced by exceſſive heat. In Alexandria alone, when taken in the 6th century by the Mahometans, there were 4000 baths.

A variety of exerciſes were preſcribed by the ancient phyſicians; thoſe of a gentle nature were carriages and litters: penſile beds ſtill more delicate, invented by Aſclepiades, and friction of the external ſurface might, without doubt, have their utility in lingering and chronic diſeaſes, where more effectual agitation could not be endured. Aſclepiades employed likewiſe penſile baths, in which bathing and delicate exerciſe were united. Sailing they conſidered as a ſtrong exerciſe. Declamation, or exertion of the voice, was preſcribed in ſome diſeaſes of the ſtomach, indigeſtion, and pain about that region. Galen is abundantly prolix on the various exerciſes, and in regulating the gradations to which they ſhould be extended. By means of clean linen, and riding on horſeback, we may ſafely in our variable watery climate, diſpenſe with a great part of the ancient gymnaſtic toils and ſyſtematic diſcipline: not that cold bathing, uſed in moderation, is without its advantages in waſhing away impurities from the ſkin, and in ſultry weather invigorating the languid conſtitution. How far the gymnaſtic medicine may be beneficially preſcribed in the cure of diſeaſes muſt be a future conſideration.

Amongst the phyſicians who practiſed at Rome, ſome ſlaves are enumerated. Antonius Muſa, originally of ſervile condition, performed a cure on the emperor Auguſtus, who laboured under a weak habit of body, and was reſtored by cold bathing; for this ſervice the ſenate decreed a ſtatue to be erected to Muſa. Some ſlaves, kept in the houſes of phyſicians to prepare their medicines, are ſaid to have acquired their freedom, and to have commenced doctors and ſurgeons. A few young ſlaves of ingenuity were trained up to groſs ideas of Phyſick and Surgery: they aſſiſted at the baths, applied unguents and perfumes, and performed the offices of friction, and of tonſors, &c. We find amongſt ſome legacies of rich Romans, Phyſicians, Surgeons, Preceptors, and black cattle, promiſcuouſly bequeathed to their friends and relations: many of them were unfortunate captives taken by the chance of war. In the houſes of a Roman Grandee might be found almoſt every profeſſion and mechanic art. The number of wretches maintained by a private Roman family, whoſe life and death depended upon the will and caprice of a maſter, appears now incredible. Craſſus, one of the Triumvirate with Cæſar and Pompey, and the richeſt man in Rome, poſſeſſed a multitude of ſlaves equal to a large army.

It appears that many of the ſlaves employed in the different occupations at the baths, were frequently called Phyſicians: the term was indiſcriminately applied, as we now confer that of Doctor upon the moſt contemptible Empiricks. Mr. Le Clerc has proved, from indubitable teſtimony, that at Rome the Medical profeſſion was not conſidered as ignoble: this Gentleman has taken ſome pains to collect vouchers, to reſcue the Faculty from ſuch baſe alliance and humiliating condition. In Egypt Medicine was practiſed by the Prieſts, and by ſome Kings; in India it was confined to the learned ſect of Bramins: Eſculapius, the firſt Phyſician of

Greece, was deified, and his deſcendant, Hippocrates, honoured with a golden crown: Democedes, the Greek Phyſician, was familiarly admitted to the table of Darius. At Rome Aſclepiades and Alexion were the intimate friends of Cicero: Charicles, Phyſician to the Emperor Tiberius, is particularly mentioned by Tacitus as the *friend* of that Monarch, with whom he was familiarly invited to table, and whoſe death that Hiſtorian tells us he prognoſticated to Macron two days before it happened. The amount of a ſingle fee paid to Charmes, a phyſician of Nero's reign, and the princely legacy left by Crinas, a celebrated Empiric of the ſame reign, to rebuild the walls of Marſeilles, are totally unparalelled in modern times. Mr. Le Clerc quotes ſeveral reſpectable authorities to prove, that under the Roman Emperors, the royal Phyſicians, or Archiaters of the palace, held the ſecond rank in the Empire. Amongſt the Arabians and Saracens, Mahomet's followers, Medicine was held in ſupreme reſpect and veneration.

Archiater, a title conferred upon ſome Roman Phyſicians, has given riſe to a grammatical controverſy. It appears that this diſtinction included not only the Phyſicians to the Emperor's perſon, but likewiſe thoſe appointed to attend the ſick poor in the ſeveral diſtricts of Rome, and in the diſtant towns and villages. An ample ſalary out of the public treaſury was allotted to the Archiaters,

chiaters, they were exempted from all taxes, and were indulged with profitable and honorary privileges. A ſimilar inſtitution, though not ſo honorable nor lucrative, is at this day ſupported at the public expence in Italy, and ſome general eſtabliſhment of the ſame kind is greatly wanted in Britain. Hoſpitals alone, it is demonſtrable, are totally inadequate to effect any great national ſavings amongſt the lower and induſtrious orders by means of Medical aſſiſtance. At Rome, Hoſpitals for Sick, a Medical School, and a College of Phyſicians or Archiaters, who examined the capacity of candidates previous to admiſſion, were erected under the Emperors. At what era Archiaters were inſtituted, is yet a matter of diſputation: Andromachus, Nero's Phyſician, is the firſt we read of dignified with this title.

CHAP. V.

The Deſtruction of the Weſtern Roman Empire, by the Goths and Vandals, in the ſixth *Century: Of Mahomet, and the irruption of the Arabians: their Effects on Medicine and Literature: Of Arabian Writers on Medicine and Surgery: The Origin of the Small-Pox and Meaſles.*

A DARK chaſm of nearly three hundred years now enſues in Medicine, Surgery, Literature and Arts. The Roman Empire oppreſſed by internal tyrants, the Emperors and ſoldiers, ſunk into an abandoned effeminacy and corruption of manners, had been ſucceſſively invaded, ſeveral of its frontier provinces torn off, and after ſome centuries of defenſive war was finally overturned by the torrent of northern barbarians. The final overthrow of this mighty coloſſus in Italy and the weſt of Europe, happened in the ſixth century of the Chriſtian era. The hiſtory of this barbarous inundation is a continued ſcene of unexampled cruelties: blood and deſolation marked the footſteps every where of thoſe fierce ſavages. Men, women, children, and populous cities were involved in one promiſcuous ruin, and extirpated by fire and ſword: no age, ſex, rank, not even the ſacerdotal order, could eſcape their fury and vindictive ferocity. All the ſciences and arts of Rome then became overwhelmed in the general wreck. The eaſtern part alone of the Roman Empire ſtill ſubſiſted in ſplendor; and their feeble monarchs, diſtinguiſhed by the title of Greek Emperors, reſided at Conſtantinople.

This cataſtrophe was immediately ſucceeded by another memorable event. Six centuries after the appearance of the Meſſiah, a new religion aroſe in the eaſt: the Arabians, under Mahomet, (P. C. 622.) and his ſucceſſors, ſallied forth ſword in hand, from the deſerts of Arabia, to propagate his religious doctrines, and with rapidity ſubdued ſeveral great kingdoms and provinces in Africa and Aſia, and in Europe a conſiderable part of Spain. The Alcoran, thoſe wild rhapſodies of Mahomet, and the ſword, were the only ſtudies in repute, or even tolerated amongſt his firſt diſciples, Under the firſt ſucceſſors to the Arabian prophet, that noble monument of ancient literature, the Alexandrian library, the moſt magnificent collection of books that the world could then boaſt of, was conſumed to aſhes. In this conflagration, four, others ſay ſeven hundred thouſand volumes periſhed, ſix hundred only were ſaved from the flames. During the firſt paroxiſms of their fanaticiſm, innumerable works of Science were eradicated. Hippocrates, Ariſtotle, Galen, and Diaſcorides were amongſt the few ſpoils of medical genius preſerved from deſtruction.

On the fall of the Roman power in Italy, and during ſeveral ſucceeding centuries, ſwarms of indigent freebooters from Germany, and the northern foreſts of the continent, kept Europe in perpetual alarm, by their formidable invaſions and piracies. The Franks, about the cloſe of the ſixth century, had poſſeſſed themſelves of Gaul, the Huns of Panonia, the Goths and Lombards of Italy: the numerous hive poured out from the frozen loins of the North, had covered the moſt fertile ſpots of Europe. England, when the Roman legions had been withdrawn, was ſucceſſively invaded by Saxons, Danes, and Normans. In conſequence of this deluge of barbarians, fanatics, or illiterate warriors over Europe, and over part of Aſia and Africa, we have no medical author, at leaſt no improvement in this ſcience, from the period of the Greek writers, mentioned in the laſt chapter, until the beginning of the *tenth* century. Science and medicine is even then confined to the Arabians alone. Schools for the cultivation of literature, it is true, had been built long before the tenth century, in ſeveral kingdoms of Europe. The univerſity of Paris was founded by Charlemagne, (P. C. 800.) and Oxford in England by Alfred. Iriſh hiſtorians aſſert, that colleges had been earlier erected in that iſland, than in either France or England, and that they were much frequented by ſtudents from the continent of Europe. The ſcanty pittance of learning that ſurvived the deſtruction of the Roman Empire (Greece excepted) was ſolely poſſeſſed by the clergy. The Nobility and gentlemen could neither write, read nor reaſon. In leſs than one century after the Northern barbarians had ſettled in their new conqueſts, every veſtige of Roman literature, taſte, and almoſt of arts, were either obliterated or demoliſhed. During four centuries after, Europe does not produce one author that deſerves to be read, nor any one art, or uſeful invention. The illiterate Goths would not permit their children to read or write, nor to be inſtructed in any ſcience but that of war; they imagined that the arts and ſciences had enervated the Romans, and debaſed their minds.

When the religious frenzy of the Mahometans was abated, after they became enriched by commerce, and ſatiated with conqueſt, their military ferocity ſubſided: arts and literature were then cultivated with great induſtry: the medical profeſſion in particular, was rewarded and encouraged with rank, and bountiful emoluments, ſuperior to every other nation where this art had hitherto been exerciſed; and they early endowed ſeveral medical ſchools in Perſia, in Africa, and in Spain. It became a cuſtom with the Mahometans, wherever they built a Temple of Worſhip, to add to it a ſchool, and an hoſpital for the ſick. Hiſtorians report that one of the Mahometan caliphs, in the year 820, ſent to the Greek Emperor at Conſtantinople, to requeſt copies of his beſt books, which he ordered to be tranſlated into Arabic, by ſome of the Jews or Greek Chriſtians. Galen had been firſt tranſlated into the Syrian language,

guage, but the tranſlation was wretchedly executed, and adulterated with the vain fables and aſtrology of the Arabians. Ariſtotle too was ſtudied with incredible ardor by the Mahometans. Magic, judicial aſtrology, and the interpretation of dreams were alſo in high repute, and by which the Muſſulmen regulated the moſt important enterpriſes. Such ridiculous follies which all wiſe men look down upon with ſilent contempt, helped to ſupport enthuſiaſm and impoſition. The Arabians, probably, reaped the fruits of the obſervations made by the Babylonians, Egyptians, and Greeks in Aſtronomy. That diviſion of the heavens into twenty eight manſions of the moon, is, however, peculiar to the Arabians, and is different from the Greek conſtellations: they denote merely thoſe ſtars to which the moon is near every night, in her monthly courſe round the earth. Their aſtrologers and conjurors found them very convenient in the exerciſe of their deceptions. Algebra is alſo a ſcience, and a word derived from Arabia: it is that kind of univerſal arithmetic, by which intricate mathematical problems are reſolved, and arithmetical operations greatly facilitated.

Three new diſeaſes, the Small-pox, the Meaſles, and the Spina ventoſa, are firſt deſcribed by the Arabians. The two former diſeaſes, which have ſince unpeopled more of Europe than all the fierceſt wars, bloody exploits, and violent deaths, with which the annals of hiſtory and juriſprudence are ſtained, had never before been ſeen in any part of the globe, frequented by Europeans; at leaſt no hiſtory is found of them in any ancient medical author, poet, or hiſtorian of either Greece or Rome. Mahomet's followers are ſaid to have exported thoſe two ſpecific poiſons from the deſerts of Arabia. The moſt remote traces which I can find of the Small-pox, is in Egypt, during the reign of Omar, Mahomet's ſucceſſor. Aaron, a native of Alexandria, is mentioned by Rhazes, as having, nearly about that time, written on the Small-pox. Variolous poiſon was ſoon ſpread by the Mahometans through Syria, Egypt, Perſia, Spain, and wherever they carried their victorious arms. Many centuries after, the cruſades or holy wars were inſtrumental in diffuſing this exotic venom more widely over Europe; and ſince that time, both thoſe diſeaſes have committed incredible havock amongſt the human ſpecies.

Rhazes (P. C. 900.) and Avicenna, both give a correct hiſtory of the diſtinct and confluent, or more properly of the benign and malign Small-pox, of the diagnoſtic and prognoſtic, the favourable and bad ſigns, and the method of cure. Rhazes was by birth a Perſian, and practiſed at Bagdat, where he preſided over an hoſpital. His treatiſe on the ſmall-pox and meaſles, is tranſlated from the Arabic, by the care of Dr. Mead, and may be ſeen entire in the latter's works, or in a ſeparate diſſertation. He appears in many inſtances to have treated them judiciouſly, and recommends the cooling regimen to a degree which phyſicians, practiſing in northern climates, might not unreaſonably think bordering on exceſs.

If the feveriſh heat and ſymptoms in the Small-pox raged with violence, Rhazes directed copious blood-letting not only before the eruption, but even after, if the fever had not abated. In imitation of Galen, young perſons under fourteen years of age were cupped only. Water cooled with ice or with ſnow was given for drink in large draughts; and if this did not paſs off by urine or ſweat, or the fever abate, he directed the water to be forced up by vomiting: this was done to promote the eruption of the puſtules. For the ſame intention, the ſick perſon was wrapped up in clothes, his body rubbed all over, and cold water given for drink: or two veſſels containing hot water were placed one before, the other behind, and the body covered only with a ſhirt: the hot vapours aſcending, were expected to ſoften the ſkin, and to facilitate the eruption. This vapour was not ſuffered to cool upon the body, but was wiped off with great diligence. The legs and feet were alſo bathed in warm water, and ſometimes emollient Poultices were applied to the feet.

Several applications were preſcribed to defend the eyes, if redneſs and itching, indicated a crowd of puſtules preſſing upon thoſe tender organs. He alſo took great care to protect the throat from numerous puſtules by gargles, and if great hoarſeneſs and ſtraitneſs of breathing, threatned future ſuffocation, blood was drawn. To ripen the ſmall-

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All fleſh meat, fiſh, hot and high ſeaſoned things, and milk were forbidden. Barley water mixed with ſugar, or a decoction of raiſins, figs and fennel ſeeds were given for drink, and in violent fever, the cooling acid juice of pomegranate ſeeds, boiled with ſugar, and a ſmall portion of gum arabic; the chamber was alſo kept cool. The "Aqua Mulſa," or honey and water, fermented together, was a favourite febrile drink of the Greeks and Romans. Rhazes deſcribes the compoſition of many ſyrups and oxymels,given in ſmall-pox: they were a mixture of the juices of ſeveral acid fruits and vegetables, to which vinegar and ſugar were ſuperadded; and ſometimes a ſmall quantity of camphor made one ingredient in the cooling ſyrups and electuaries. To propel the Meaſles,where the ſick ſeemed to labour under great anxiety, and were prone to faint, they adviſed immerſion of the body in cold water, and friction of the ſkin.

The phyſicians of Arabia firſt made uſe of the milder purges, Manna, Caſſia, Senna and Myrobolans. They are the firſt on record, who ſpeak of ſugar and ſugar-candy, extracted from the ſugar-cane, and who uſhered ſyrups, juleps, confections and conſerves into medicine; compoſitions in which ſugar is often one of the principal ingredients. Before the Arabians, honey was commonly employed by the Greeks and Romans, to wrap up nauſeous medicines. To Materia medica, and to Botany, the Arabians added ſeveral plants and oriental aromaticks; amongſt the latter are muſk, nutmeg, mace, and cloves. To magnify oſtentation, and encreaſe their profits, gold, ſilver leaf, bezoar, and precious ſtones were taken into the medical ſhops, and ſurpriſing virtues invented, to tempt credulous purchaſers. The Arabians firſt mention a chymical proceſs, called diſtillation, which it is probable they learned from the Egyptians: Roſe water and ſome oils were, however, the only production of their chymical laboratories. In deſcribing the eſſential ſigns of diſeaſes, the Arabians were negligent and incorrect: then follow a formulæ of preſcriptions, and compound medicines. Their Theory and Practiſe of Phyſic, was entirely borrowed from the Greeks, and blended with a heap of ſuperſtitious noſtrums: they made no additions to Anatomy, but took all from Galen. Cantharides were applied externally in the form of bliſtering plaſters by the Arabians: Archigenes, Aretæus and Alexander Trallianus had, on ſome few occaſions,employed them; but in general the Greeks and Romans preſcribed acrid ſinapiſms of muſtard, or other ingredients of that nature. The Arabian phyſicians limited the application of bliſters to a very ſmall number of diſeaſes, ſuch as lethargy, apoplexy, and ſome analogous drowſy complaints; and for many centuries after they were not uſed in fevers of an infectious and malignant nature, in internal topical inflammations, in pains of the breaſt accompanying phthyſical complaints, in all which bliſters are now conſidered as powerful remedies.

Avicenna's "Canon Medicinæ," is compiled principally from Galen, Rhazes, and Halyabbas. This book, or general ſyſtem of Medicine and Surgery, many ages after was celebrated throughout all the ſchools of medicine: it was firſt brought into Europe by the cruſaders, and from that time, until the ſixteenth century, Avicenna was regarded as the Prince of Phyſicians, and held in ſuch profound veneration, that Hippocrates and Galen were ſeldom mentioned. Avicenna's canon, and the ninth chapter of Rhazes were the text books in medical ſchools, and the former was honoured with ſwarms of commentators. Avicenna has given a catalogue of the Materia Medica, and of the "Formulæ medicamentorum" then in uſe. He commended hot medicated waters in obſtructions and inward weakneſs: he condeſcended even to deſcribe the compoſition of coſmetics to poliſh the ſkin, and to make hair grow or fall off. Rhazes deſcribed correctly the Spina ventoſa, accompanied with an enlargement of the bone, caries and acute pain: he is likewiſe the firſt author who devoted an entire chapter to the diſeaſes of infants. In difficult labours he recommends the fillet to aſſiſt in the extraction of the fœtus: Avicenna for the ſame purpoſe recommended forceps. Rhazes relates ſeveral impoſitions of the profeſſed empirics of his nation.

Avenzoar, (P. C. 980.) and Averrhoes I ſhall be able to diſmiſs with a few remarks. The firſt wrote upon Surgery, but thought it incumbent upon him to apologize for deſcending to treat of ſubjects ſo mean. Surgical operations, amongſt the Arabians and Mahometans, were then practiſed by men of low ſervile ſtations; and from them we are not to expect any very intereſting improvements in that uſeful art. Avenzoar draws the diagnoſtic ſymptoms of two rare inflammations, that of the Mediaſtinum and Pericardium. He recommends a drachm, or thereabouts, of black hellebore in menſtrual obſtructions, and in ſome particular caſes, as a diuretic: in ſmall quantities, it was not found to produce any violent or dangerous effects, and is ſince proved to be a powerful emmenagogue. Averrhoes's intention was to rectify theoretical controverſies, by the aſſiſtance of Galen and Ariſtotle: theſe, like a thouſand other abſurd reveries, are long ſince evaporated.

Albucasis firſt reſtored Surgery amongſt the Arabians to ſome repute: Rhazes complains of their groſs ignorance, and that the manual operations

tions were performed by the phyſicians ſervants. Albucaſis enumerates a tremenduous liſt of ſurgical operations, ſufficient indeed to excite, in men of any tenderneſs, dread and horror. The hot iron and cauteries were favourite remedies of Albucaſis and the Arabian ſurgeons: in inveterate pains they repoſed, like the Egyptians, great confidence in burning the part. He deſcribes accurately the manner of drawing away the water, by tapping the Abdomen in the Aſcites. He deſcribes different inſtruments to draw blood, and has left a more ample and correct delineation of ſurgical inſtruments than any of the ancients. He gives various obſtetrical directions for extracting the fetus, in caſes of difficult labours. He mentions the Bronchocele, or prominent tumour on the neck, which, he ſaid, was moſt frequent amongſt the female ſex. We are informed by this writer, that the delicacy of the Arabian women (I ſhould ſuſpect rather the jealouſy of the men) did not permit male ſurgeons to perform lithotomy on females; but when neceſſary, it was executed by one of their own ſex.

An Arabian Author, Abi Oſbia, furniſhes us with a catalogue of three hundred medical writers of the Mahometan religion. I have mentioned thoſe who ſignalized themſelves by any uſeful publication or diſcovery: the reſt are beneath mediocrity, and barren of inſtruction: men would fill their heads to little advantage with ſuch uſeleſs lumber, and they are deſervedly permitted to moulder in duſt and oblivion. There are many manuſcript copies of Arabian Medical authors preſerved in different libraries of Europe, whoſe works it has not been thought neceſſary to tranſlate and to commit to the preſs.

Europe, from the demolition of the Roman Empire, and the era of Mahomet, does not in the courſe of the five following centuries, furniſh one ſubject for criticiſm in literature or medicine. The diſguſting labour of hiſtorians in that period is a dull record of the follies, barbarities, and ſtupidity of our hemiſphere. The Roman ſpoils had been divided amongſt its fierce invaders: this feudal ſyſtem, afterwards corrupted, produced innumerable ſources of anarchy. Europe was filled by degrees with ſtrong caſtles, with thouſands of petty tyrants and imperious barons, who were waging inceſſant hoſtilities againſt each other. The great bulk and lower claſſes of the people, were reduced to an ignominious ſtate of vaſſalage, and trembled under the harſh rigour of ariſtocratic deſpotiſm. Genius and arts were ſtill kept alive in one ſmall corner alone of Europe, Greece; but even at Conſtantinople, the capital, literature was abſorbed in theological controverſies. Almoſt every other country of the European Continent was diſtracted with private quarrels, wars and rapine: conteſted rights, perſonal injuries and diſputes were terminated by combats, by the ordeal of fire and water, and other abſurd modes of juriſprudence: the roads were infeſted with gangs of robbers,

and

and travelling attended with great riſk and danger: the intercourſe with provinces even of the ſame kingdom was rare, and attended with great hazard; and after eſcaping depredations on the high way, a ſtranger, who ſhould ſettle but for a ſhort time on the lands of a proud Baron, might be claimed as a vaſſal, or perhaps as a ſlave. Towards the cloſe of the eleventh century, theſe diſorders had reached the extreme of degeneracy.

CHAP.

C H A P. VI.

From the eleventh *to near the middle of the* fifteenth *Century, the* State *of* Medicine *and* Surgery: *the Importation of the Leproſy into Europe.*

IN the interval, from the 11th to near the middle of the 15th century, phyſic, arts, and literature, began to revive, though by very ſlow gradations. It was not before the ſixteenth century, that the human genius had recovered from that profound ſtate of lethargy, under which it languiſhed ſo many ages. Italy, by its proximity to Greece and Conſtantinople, where arts and elegance ſtill ſurvived, (and which imported the luxuries and commodities of the eaſt by the Black and Caſpian ſeas) had made ſome progreſs in refinement, induſtry, and commerce. The firſt means, however, which contributed to diſpel the general ruſticity and ignorance of Europe aroſe from ſuperſtitious follies, and romantic expeditions: I mean the religious Cruſades. To this wild enthuſiaſm Europe is conſiderably indebted for the recovery of her liberty and reaſon: from this cauſe followed the moſt ſalutary change in national police, juriſprudence and civilization.

Syria and Paleſtine, was conquered in the eleventh century from the Mahometan Caliphs by the Turks or Tartars, a fierce race of men, who ruſhed out from the immenſe Aſiatic wilderneſs, called Great Tartary, and who embraced the religion of thoſe they had ſubdued. Pilgrimages from Europe had frequently been undertaken by the devout Chriſtians to behold the ſepulchre of Chriſt at Jeruſalem. The different Mahometan Caliphs had encouraged this as a lucrative trade; but the Turks, now in poſſeſſion of the Holy City, treated many Chriſtian devotees with cruelty and outrageous oppreſſions. Europe then illiterate, credulous, and ſuperſtitious, was fired with indignation and reſentment. The religious delirium and enthuſiaſtic zeal againſt the infidels, was inflamed ſtill higher by another circumſtance: an obſcure prophecy of the Bible led many Chriſtians to expect the downfal of the world, and a univerſal conflagration; they ſet out, therefore, at the inſtigation of the Monks and the Pope, to exterminate the Saracens, or to periſh, like martyrs, on the tomb of the Meſſiah.

All Europe, kings, princes, nobles, men, and even women, during two centuries, were engaged with fanatick and fruitleſs ardor, in wreſting Paleſtine from the infidels. Happily grand effects and ſubſtantial benefits, not then foreſeen, were derived from this epidemical and bigoted madneſs. In the courſe of that long war, moſt of their vagabond armies were obliged to march through Italy, and through Greece and Conſtantinople. Here they beheld with admiration and aſtoniſhment, a ſplendid city, numerous manufactories, and a refined taſte in arts and amuſements. Some of the cruſaders who returned back from the holy land, brought with them copies of Ariſtotle, and of the Arabian medical authors. This was one of the principal means, by which Arabian learning was firſt introduced and ſtudied in Europe: ſcience, and the liberal arts were called the ſtudy of the Saracens. The commerce of the Italians with the Moors, who had ſettled in Spain, was another means of introducing Arabian literature. Of the few imported medical authors, Avicenna and Rhazes took the lead, and were alone read in Europe. The Greeks had been tranſlated into Arabic, from this they were again changed and disfigured by compilers or clerical commentators into barbarous latinity, the only language then, and for many centuries after, in which learning of any ſort was conveyed.

An accidental diſcovery in Italy, about the middle of the twelfth century, (1137) of Juſtinians pandects, contributed alſo eſſentially to break the thick clouds of ignorance, that had ſo long darkened our horizon. This code of Roman juriſprudence, which by ſome lucky incident had eſcaped the general wreck, was, in a few years, ſtudied with avidity in ſeveral countries of Europe, and profeſſors of civil law were appointed to read lectures. Lectures on civil law were read at Bologna, at Oxford and at Paris; and the ſtudy of the Roman juridical code, ſpread with rapidity through moſt kingdoms in Europe. At Bologna, in Italy, in the year 1262, there were ten thouſand; and at Oxford, in the year 1340, there were thirty thouſand ſtudents. Montpelier in France, and ſome colleges of Italy, were then the moſt celebrated medical ſchools of Europe. Italy took the lead not only in Medicine, but in all the polite arts, and compoſitions of elegance. In England, I cannot perceive that medicine was ſtudied at either of our univerſities, as a regular ſcience, before the end of the fifteenth century. The univerſity at Paris, founded by Charlemagne, *firſt* conferred degrees of batchelor and doctor, in the year 1231. The forms and times of ſtudy were then regularly eſtabliſhed, and imitated by ſeveral other univerſities. Thoſe who reached the degree of Doctor, in any of the learned profeſſions, were advanced by that diſtinction to the higheſt rank and dignity then known in any ſtate, the rank equal to military knighthood. The ſtatutes of the Schola Salernitana, and thoſe of the medical ſchool at Naples, ſeem to have been prior to thoſe of Paris.—By them, the Phyſician muſt have ſtudied ſeven years, and, after being examined on Galen and Avicenna, he was inveſted with the ring and cap. The Surgeon was qualified after one year's ſtudy of Anatomy.

THE art of making paper, invented in the eleventh century, increaſed the number of manuſcripts, and leſſened the price of books. Printing, that important art, invented afterwards in the fifteenth century, ſpread light over Europe. The ancients had either written on the papyrus or upon parchment, and the books of the latter deſcription, were now extremely dear. Few private perſons before this diſcovery poſſeſſed a ſingle book. In ſome monaſteries they had but one miſſal. A book of homilies, compiled by ſome French Saint, ſold for two hundred ſheep, beſides a large quantity of corn. Even ſo late as 1471, Lewis the XIth of France, borrowed the works of Rhazes the Arabian phyſician, from the Pariſian faculty of medicine; but, previouſly was obliged to depoſit a quantity of plate as ſecurity, and to find a nobleman to join in an additional bond for the care and return of the book. This is a proof that manuſcripts and books were then exceedingly ſcarce, and that ſcience and medicine were in the hands of a ſmall number. The hiſtory of the church during the dark ages affords many examples of biſhops aſſiſting at councils, who made the ſign of the croſs, becauſe they had not learned to write.

Scholastic theology, ſcholiums, magic, Roman juriſprudence, and the canon laws enacted by the different churches and monaſteries, yet embraced almoſt the whole ſcope of their ſtudies. Ariſtotle too was univerſally admired; and unfortunately his ſubtle refinements gave a wrong turn to the firſt efforts of reviving genius in Europe. This little ſtock of learning was principally confined to the clergy and monks, who on that account engroſſed moſt of the religious and civil employments, accompanied with profit or precedence;

and

and who principally exerciſed the profeſſion of phyſick.

CHIVALRY, which grew up with the cruſades, was long after their termination the darling paſſion and principal employment of the nobility and independant gentry in Europe. Tilts, tournaments, and knight-errantry, were then in full vigor, and contributed more effectually and ſpeedily, than dry ſyſtems of morality, to refine and poliſh the manners. Europe from another circumſtance was enlightened and civilized. The powerful and the petty barons embarked in the cruſades, had in the courſe of theſe diſtant wars ſold part of their lands and arbitrary privileges for a ſmall pecuniary conſideration; numbers by this opportunity redeemed themſelves from ſlavery and vaſſalage: cities and communities were formed, which gave liberty and protection to induſtry and arts. In England commerce and arts were ſlow in advancement, when compared to Italy and other maritime parts of Europe. For this, ſeveral reaſons may be aſſigned: the diſtraction of the Saxon heptarchy, the irruption of the Danes, the conqueſt of the Normans, the Cruſades, the inceſſant attempts and ambitious enterprizes of their kings afterwards to poſſeſs the crown of France, and laſtly, the civil wars of the York and Lancaſter line contending for the throne. All theſe ſucceſſive and violent revolutions baniſhed leiſure, and either prevented or interrupted the cultivation of arts, induſtry and ſcience. Real literature in England,

land, for I do not conſider their theology, and ſcholaſtic diſputes deſerving of that name, appears to have firſt originally dawned in the thirteenth century, with Bacon, the monk of Weſtminſter-Abbey.

DURING this abaſement of the ſciences, Jew phyſicians were employed by moſt of the Popes and crowned heads in Europe. John of Gaddeſden in the fourteenth century, is the firſt Engliſhman appointed court phyſician. Jews, or foreigners, eſpecially from the Cruſades, had alone been thought qualified for that poſt. Their knowledge of the Arabic language gave them an advantage in ſtudying the medical authors. St. Lewis, King of France, had caught the leproſy in the holy wars, and his Jew phyſicians preſcribed to him a nauſeous potion, the blood of young children. The leproſy, one of the evil fruits of the Cruſades, was then a very general and common diſeaſe through moſt kingdoms of Europe: in Britain there were many houſes of confinement for lepers: in France, eminent hiſtorians of that country reckon up two thouſand Lazarettos, buildings diſtinct from hoſpitals, and endowed by St. Lewis. A Roman army had once carried this judaical ſcurf from Paleſtine and Egypt; but in proceſs of time, and by taking proper precautions to ſeparate the infected from the ſound, it gradually diſappeared: this concords with our own obſervations of the diſeaſe in modern times.

Alchymy, or the ſecret of changing metals into gold, began now to be purſued in Europe: it was one of the grand myſteries which Bacon and all the ſucceeding chymiſts were endeavouring to diſcover. This deceitful art, which flattered the utmoſt gratification of human avarice, was, for ſeveral centuries eagerly proſecuted in England, and ſtill more aſſiduouſly in Germany; but dear bought experience and philoſophy have now almoſt cured mankind of that frenzy, and convinced them that riches muſt be acquired by other means. The chymiſts conceived another project ſtill more ridiculous and improbable; that was to extract by ſome chymical proceſs an univerſal panacea, capable not only to cure all diſeaſes, but endowed alſo with an exuberant efficacy, which ſhould prolong life far beyond the common courſe of longevity.

Albertus Magnus, a German, wrote on Alchymy, in the year 1200. Shortly after him Roger Bacon, (1226) a monk of Weſtminſter-Abbey, laid the foundations of Chymiſtry, and of experimental philoſophy in Europe. He was not only an expert chymiſt, but alſo an original mechanical genius little inferior to Archimedes. He invented flying chariots, and moving ſtatues. He wrote on the nature of lines, on the teleſcope, on the reflection and refraction of light, on optics, on glaſſes, which could magnify or diminiſh objects, remove them to a diſtance, or make them to approach near, on burning-glaſſes, and on meteors and aſtronomy: he even attempted to correct the errors of the Calendar, and had diſcovered the compoſition of gun-powder. This is an uncommon inſtance of light and learning burſting from the midſt of darkneſs, a cloyſter. The clergy, Bacon's cotemporaries, conſidered him as a real conjuror: his writings appeared to them totally myſtical, and beyond comprehenſion; on that account they concluded he muſt be a magician, and interdicted his works from a place in their libraries. We are indebted to an Italian Salvinus de Armatis (1280) for another uſeful invention for the Eye-ſight, ſpectacles. Bacon was ſucceeded at the end of the ſame century by Arnoldus de Villa Nova, a Frenchman, others ſay a Spaniard, or an Italian. Arnoldus recommended the diſtilled ſpirit of wine impregnated with certain herbs as a good medicine, and a water diſtilled from certain metals in the leproſy. Raymond Lully, the ſcholar of this celebrated chymiſt, wrote ſeveral volumes on the univerſal panacea and philoſopher's ſtone. Iſaacus Hollandus and Baſil Valentine, a German Monk, who lived towards the end of the 15th century, trod in the ſame paths. Valentine was an excellent practical chymiſt, and firſt preſcribed antimony internally: his treatiſe denominated "Currus triumphalis Antimonii," extols the virtues of this powerful metal in many diſeaſes. Paracelſus, the celebrated chymiſt and empirick of the 16th century, borrowed many of his experiments and medicines from Valentine's works, together with the three original or new elements, ſalts, ſulphur and mercury: many inventions in the chymical art ſince publiſhed under other names are pilfered from Valentine. From the century in which Bacon lived, medical chemiſtry may date its origin.

John of Gaddesden, (1320,) the firſt native promoted to be court phyſician in England, is honourably introduced into the rhyme of our earlieſt poet Chaucer. In Gaddeſden's ſmall work, called "Roſa Anglica," men of curioſity may be entertained with a pleaſant detail of the diet and cookery of our Gothic anceſtors. He ſpeaks of the Small-pox as a diſeaſe then familiar, and without any intimation of the infection being recently imported by the Cruſades. One of the King's ſons, ill of this diſtemper, he ordered to be rolled up in ſcarlet cloth, and all the curtains about the bed were hung with linings of the ſame colour: upon this ſilly apparatus, Gaddeſden laid great ſtreſs. He boaſts of having ſold ſome recipes to the *barbers* for a conſiderable ſum of money; and of ſeveral other impoſitions practiſed on ignorant credulity: he recommends in certain diſeaſes, and to promote conception, a few contemptible noſtrums, and affected great ſkill in phyſiognomy and chiromancy. In his own time, Gaddeſden's book was in high renown; at preſent it appears an inſignificant production. Indeed from the downfal of Rome, until towards the ſixteenth century, there were very few books written in Europe, at leaſt on medicine or philoſophy, that a man of ſenſe, or taſte can now read with pleaſure: commentaries upon the Arabians were for a long time the boldeſt efforts of medical genius. The names of thoſe monkiſh authors are not entitled to hiſtorical record, and Le Clerc and Friend may be conſulted as a barren catalogue on this occaſion.

Gilbertus Anglicus, (about 1300,) a ſurgeon, mentions our ſulphur baths and ſome diſeaſes cured by the waters. In all probability, he alludes to Bath or Buxton warm ſprings; the utility of which, as baths, had been known to the Romans. Gilbert alſo, with many others of the clergy and medical writers, commends the royal touch in Scrophula. This is ſuppoſed to have been a monkiſh invention to increaſe the reverence for kings: it was practiſed in the dark ages both in England and in France, but is now laid aſide ſince the divinity of crowned heads came to be doubted in this iſland. Daniel Turner, the ſurgical writer, relates many extraordinary cures performed by the royal hand of the Stuart princes; with the expulſion of whom, at the end of the laſt century, this royal impoſition is laid aſide. The only comment or anſwer perhaps that ſuperſtitious follies, and ſupernatural tales of this nature deſerve, is to laugh at the author as a weak bigot, or a propagator of untruths. The Calendar of Catholick Saints is full of ſimilar fabulous tricks. Sometimes at preſent the vulgar and credulous, apply the hands of dead perſons to wens and ſcrophulous tumors upon the neck. His majeſty or any of his dead ſubjects have probably equal medical magic in their hands: if any real benefit has ever been derived from either, it can only be referred to the inexplicable force of implicit credulity, and of a powerful imagination.

The preſent chapter cloſes with the recital of a dreadful calamity which afflicted mankind in the fourteenth century. In the ſhort ſpace of four years the plague ravaged round three great diviſions of the globe, and is computed to have ſwept away the fourth part of its inhabitants. One thouſand, three hundred and forty-ſix it raged in Egypt, in Turky, and Greece, in Syria, and in other parts of Aſia: one thouſand, three hundred and forty-ſeven, ſome trading ſhips carried the infection to Sicily, Piſa, Genoa, and Italy; the following year it penetrated through Savoy, into France and Spain: one thouſand, three hundred and forty-nine, Britain and Flanders were invaded; and the ſucceeding year Germany, Hungary, and other parts of the European continent. Quarantines had not then been eſtabliſhed by any commercial nation of Europe. The ſymptoms and medical hiſtory of this plague are drawn by an eye witneſs, Guido de Cauliaco, an expert ſurgeon, and profeſſor at Montpelier. The ſymptoms of the leproſy, then prevalent in Europe, are alſo well deſcribed by Cauliaco. He is likewiſe the Author of a Surgical treatiſe, in which may be ſeen the practice, and the names of the principal ſurgical writers in his days.

CHAP. VII.

The deſtruction of the eaſtern and laſt remnant of the Roman Empire at Conſtantinople, in the fifteenth Century. The diſcovery of the Art of Printing, and of America. The origin of the Venereal Diſeaſe. The riſe of the Sea Scurvy. The firſt riſe of the Sweating Sickneſs in Europe. A general ſketch of the progreſs of Medicine and Surgery, and of the moſt diſtinguiſhed Writers, and important diſcoveries from the beginning of the ſixteenth *century to the preſent time, including an interval nearly of three hundred years. Of Anatomy and Phyſiology. Chymiſtry and Phyſicks. Learned Societies. Botany. Natural Hiſtory. Materia Medica, and Pharmacy. Medical practical Writers, and Pathology. Obſtetricks. Surgery.*

MEDICINE and letters having ſlept many ages, (except amongſt the Arabs) in the grave of Rome, Europe was beginning gradually to awake from its lethargic ſtupidity. About the middle of the fifteenth century, Conſtantinople, the laſt ſhred of Roman grandeur, was taken by the Turks or Tartars. All the Greek provinces, from the Danube to the capital, had after ſeveral centuries of war been reduced, and the degenerate princes of the once powerful Roman Empire could at laſt boaſt of but one ſingle city, within the narrow limits of which their whole dominion was contracted. This tottering and only ſurviving pillar of imperial grandeur was now ſubverted by the barbarians of Tartary. On that revolution many literary men fled from Conſtantinople and took refuge in Italy, bringing with them the ancient Greek and Roman authors, which had been depoſited for ages in the libraries of that city. A few of thoſe precious fragments had before been carried into Italy, but in general lay buried or neglected; very few made uſe of ſuch books, or as yet underſtood Greek. Science from this time is aboliſhed in Greece, and trampled under foot by the Alcoran, ignorance and deſpotiſm. Learning and Arts now ebbed back to Italy, and flowed in new channels: we ſhall find them extending to the weſt of the Alps, penetrating beyond the Rhine and the Danube into the frozen regions of the north, and the original ſeeds ſown by the Greeks and Romans riſing up gradually in almoſt every country of Europe, enriched with improvements and new diſcoveries. A new invention in Germany, in 1445, the art of Printing, gave new creation and wings to literature: books were purchaſed at a moderate expence and knowledge expanded. In 1506, Dioſcorides was printed: in 1525 Galen: In 1526 Hippocrates: in 1528 Paulus Egineta. Celſus was later in being known; I do not find that he had fallen even into the hands of the Arabians.

Historians are unanimous in ſingling out the commencement of the ſixteenth century as one of the moſt remarkable and ſplendid epochs in the annals of the world: the whole theatre of nature then begins by degrees to unfold to man. Arts and

Sciences have from that era been proſecuted with unremitting ardour and ſucceſs, and nature ſtudied not in reveries of the cloſet, but in her productions. Moſt of the modern European nations then began to take their rank and political ſtation in the balance of Europe. The modern European languages then began gradually to acquire ſome ſettled idiom, energy, and grace, to be poliſhed from Gothic ruſt and latinity! "Sound learning and good Authors, which then began to ariſe in different countries, gave a brilliancy to expreſſion; the Poets, Hiſtorians, Philoſophers, and eminent Writers purified the vehicles of knowledge in their reſpective nations."

A new diſcovery of that time, at leaſt to Europe, the loadſtone, and mariner's compaſs, encouraged ſeamen to attempt long voyages. The needle always pointing to the north regulated their courſe, and emboldened navigators to venture out of ſight of land ſeveral months together. Portugal took the lead in naval diſcoveries. Vaſco de Gama, their admiral, found out a new and more convenient paſſage to the Eaſt Indies: he firſt doubled the ſouthern cape of Africa, and arrived by that track at Indoſtan. Herodotus indeed reports, that before his days the African continent had been once ſurrounded in the contrary direction. By this modern diſcovery the traffick through Alexandria and the Red Sea, which the Venetians had reſtored to its original ſplendour, and by which the luxuries of the Eaſt were poured into Europe, was in a ſhort time dried up; and that celebrated city, like the mighty Syracuſe, is now degenerated into an inſignificant burrow. Another bold nautical adventurer, Columbus, (in 1492,) under the Spaniſh flag, firſt diſcovered the Bahama Iſlands and Hiſpaniola, both in the vicinity of the American Continent; Mexico and Peru were ſoon after diſcovered and conquered by Cortes and Pizaro. Magellan next penetrated into the immenſe Pacific Ocean, by the ſouthern extremity of America: after traverſing the great South Sea he reached the Philippine Iſlands and periſhed, but Sebaſtian and part of his ſquadron, performed the firſt voyage round the globe. Geography by thoſe important events received magnificent additions. A new continent little leſs than half of the old world; a new race of men hitherto unknown, and the round figure of the earth now inconteſtibly confirmed, were all ſubjects for wonder and admiration. Europe from this new world became enriched with gold, ſilver and profitable traffick, and Medicine gained, eſpecially from Peru, ſome ineſtimable remedies. The progreſs of navigation, and increaſe of riches, have not only introduced an entire revolution in manners and modes of life throughout Europe, but alſo various articles of dietetic luxury from Aſia and America, which are now in general eſtimation; ſuch are Tea, Coffee, Cloves, Nutmegs, Sugar, and diſtilled Spirits, and we may add Tobacco. How far they may operate in affecting the health and character of na-

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tions, have all been hacknied themes of medical and moral diſcuſſion.

A SINGULAR diſeaſe called the Venereal, in two years after the diſcovery of America, made its firſt appearance in Europe. At the Iſland of Hiſpaniola, the native Indian females communicated this foul diſtemper of their country to Columbus's ſailors; by them it was imported into Spain, and afterwards carried by the Spaniards to Naples then beſieged by the French; the latter by an intercourſe with Spaniſh proſtitutes caught the infection, and to this day the French very unjuſtly are expoſed to the opprobrious ſtigma of having this diſeaſe called after their nation. From ſuch a minute ſpark the infection ſpread rapidly (as may be readily ſuppoſed when no cure had been then diſcovered) throughout France, Germany, England, and other countries. The Egyptians, Turks and Perſians call it the French diſeaſe, and ſo do even the remote Japoneſe, a proof from whence it was imported to them. In Africa it was named the Spaniſh diſeaſe. The Mahometan Moors, after eight centuries of war, were routed from Spain by Ferdinand; and on that occaſion, the Moors, together with the Jews, who were alſo baniſhed, tranſplanted the Venereal venom to Africa, a diſeaſe to which the people of that continent were before entire ſtrangers.

FALLOPIUS, a very eminent anatomiſt, who wrote about 1555, ſpeaks of the Venereal diſeaſe as an entire new calamity and of modern introduction. From the moment of its firſt invaſion

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medical writers had all agreed in the circumſtance of its novelty. Aſtruc quotes upwards of fifty different authors before Fallopius, and in annual ſucceſſion, of one opinion in this reſpect. Some of their emphatical phraſes are, "Novum morbi genus, inauditum, inviſum, incognitum, ignotum. Novam peſtem mundo irremediabilem. Nullis ante ſœculis viſus, totaque in orbe terrarum incognitus. Peſtifer morbus, morbus atrociſſimus, irruens in homines ſœvo morſu ulcerum. Dira lues quam nulla ſit ætas antea experta. Pauperes hoc malo laborantes expellebantur ab hominum converſatione tanquam purulentum cadaver; habitabant in arvis, ſylvis, &c."

ALL Europe were alarmed with univerſal conſternation at the firſt hoſtile encroachments of the Venereal Diſeaſe. Its loathſome ulcers affected the genitals, and by degrees the palate and uvula: ſwellings and buboes aroſe in the groin: in its more advanced ſtages, excruciating pains were felt in the bones, eſpecially at night; ſcabs and ſmall running ſores covered the ſkin; nodes or protuberancies appeared in the forehead; the bones became at length carious, enlarged, and rotten: many, after lingering for months under ſuch wretched calamity, others a year or more, loſt their palate, noſe, eyes, lips, teeth, genitals, and before death preſented a cadaverous ſpectacle of deformity and corruption. This is no exaggerated picture of the Venereal Diſeaſe, when it proved rebellious to all the medicines then in uſe; and when the Phyſicians and Surgeons univerſally confeſſed what was too apparent, their ignorance of any effectual remedy for the relief of the unhappy ſufferers.

The ancients, who were extremely minute, in deſcribing even the moſt inſignificant diſeaſe, could never have omitted the Venereal, whoſe ſymptoms are ſo peculiarly and ſtrongly marked, had it been known in their days. In all the ancient medical authors, Hiſtorians, Poets, and Satiriſts, however obſcene, there is no notice of it. We have the moſt deciſive evidence that the Spaniſh crews on their return from Hiſpaniola imported the infection into Spain: one ſquadron had two hundred venereal ſick. Whoever will take the trouble to peruſe either Le Clerc's, or Dr. Friend's hiſtory of phyſick, and above all Aſtruc de Morbis Venereis, will be ſatisfactorily convinced on this topick. Diſputes reſpecting the origin of the venereal infection, in which many of the learned have taken oppoſite ſides, are in theſe authors inveſtigated to the bottom. A conjecture had been ſtarted againſt the novelty of the American diſeaſe, from finding a diſtant ſimilarity in the ulcers of Job, of King Herod, and of the Roman Emperor Tiberius: theſe, with many other objections and abſurd fables, invented to account for this new phenomenon in medicine, are ably refuted by the above writers. The only certain cure and ſpecifick for the confirmed pox, quickſilver, or mercury, was condemned by the Greek and Roman phyſicians as a poiſon, and never uſed internally, nor in unctions.

Avicenna the Arabian, mentions ſome caſes of leproſy accompanied with ulcers of the penis, and heat of urine; but with no other ſymptom of what is called pox, to diſtinguiſh it from a ſimple Gonorrhœa. In warm climates "ſordes" collected under the prepuce, was liable ſometimes to excoriate the ſkin. Heat of urine is deſcribed by ſeveral authors as ariſing from a connection with lepers, with women afflicted with cancer in the womb, or even in ſultry regions during their periodical diſcharges: the Moſaical law ordained ſome rigid ceremonies to be performed by the female ſex in the latter predicament. Ulcers of the penis, phymoſis, and paraphymoſis, are likewiſe ſpecified by many of the antient phyſicians, particularly by Celſus, who is very minute in the diſorders of the Penis and Genitals; but there is no ſort of reaſon to think they were venereal: the genitals are ſubject equally with other parts of the body to inflammations and ulcers. Gleets and "lapſus ſeminis," from exceſs of venery, are alſo mentioned by C. Aurelianus.

If the reports of ſome miſſionary Jeſuits to China can be credited, the origin of the Venereal Diſeaſe in that country cannot be traced back: in the moſt ancient of their medical books, it is ſaid to be mentioned as a common diſtemper, only that its ſymptoms are of a milder nature than in Europe. Mr. Aſtruc has with great learning and ingenuity endeavoured to refute this opinion.

So early as 1496, the Venereal diſeaſe had made progreſs over ſome provinces of France: a public arret of the parliament of Paris was iſſued in that year, commanding all foreigners infected with this diſtemper to depart from the city in twenty-four hours, and afterwards, with all poſſible expedition from the kingdom: they were forbidden to return back again unleſs cured, under pain of death: all native inhabitants in the ſame forlorn ſituation were ordered to confine themſelves ſtrictly to their houſes, and the venereal poor to be ſhut up in a public building provided for them in the ſuburbs at the national expence: all were ſecluded from mixing with the publick, and ordered to keep within their reſpective habitations, under the penalty of forfeiting their lives by tranſgreſſion. At Edinburgh they were baniſhed to a ſmall iſland in the bay of the ſea adjoining to that city. It was then thought that the infection might be propagated at ſome diſtance without immediate contact. That the diſeaſe was looked upon as totally different from the leproſy, appears from another circumſtance: in all the leprous hoſpitals which then ſtood in Paris, no venereal patients were admitted leaſt they ſhould *infect* the lepers. The elephantiaſis, or lepra Arabum, at leaſt a diſeaſe nearly ſimilar in ſymptoms, is common in the cold northern Iſland of Iceland, owing to the rigorous climate, diet, and manner of life of the Natives; but the venereal diſeaſe was unknown there until 1753.

A VARIETY of unſucceſsful attempts and new experiments were made by the medical faculty to repel this obſtinate foe. The whole rotine of regular practice had been ineffectually exhauſted.

At length obſerving in Meſue, an Arabian Author, that quickſilver ointment had been uſed by the Mahometan Phyſicians in diſeaſes of the ſkin, not indeed with any intimation of ſalivation, they had recourſe to mercurial unction, and ſucceeded far beyond their moſt ſanguine expectations. Mercurial unction was uſed by Phyſicians ſo early as 1497 and 8. Jacobus Carpus, an Italian, (1520) a dextrous ſurgeon and anatomiſt, is not the firſt who uſed the quickſilver unction, although he is ſaid to have amaſſed, by venereal practice, upwards of fifty thouſand ducats; a prodigious fortune in thoſe days when gold and ſilver were ſcarce commodities.

Nicolaus Maſſa of Venice (1532) and Fallopius a later writer by twenty years, publiſhed a correct hiſtory of the Venereal Diſeaſe as it then appeared, and the different modes of cure then in practice. Numbers, by their account, fell victims to the raſhneſs of ignorant empiricks, and the violence of the ſalivation. We are told that the ſick were ſhut up in a room kept conſtantly heated like an oven, and from which all freſh air was excluded: they were anointed with mercurial unction on different parts of the body, once or oftener in the day, the ſaliva was forced out in torrents, their mouth became inflamed and ulcerated, and their teeth fell out: ſo exceedingly, in the extreme of ſeverity, was the ſalivation, that from 7 to 10 pints were in that way diſcharged daily, during 7, 10, or ſometimes more days. A new method was alſo early invented to cure this diſtemper, and to excite a ſalivation by means of mercurial fumigation. After previous bleeding and purging, the patient was placed in a ſmall heated apartment or ſtove; then a ſmall tablet or paſte, made of cinnabar and turpentine, or ſtorax, was laid on coals or on a heated crucible placed between the patients feet, his body being covered with a ſhirt only, and in this way a profuſe ſweat was forced. In caſe of any tendency to fainting, the patient was provided with a pipe or tube, by which he might inſpire freſh air. This proceſs was continued a quarter, a half, or even ſometimes a full hour, according to the urgency of the ſymptoms, and ſtrength of the patient: he was next ſweated in a warm bed an hour or two, and was afterwards wiped dry. In this way he was fumigated daily, or every ſecond and third day, according to the urgency of the caſe, 6, 8, or 9 times, until either a ſalivation or a flux enſued. Some were ſo abſurd as to forbid any change of linen throughout the whole courſe of ſalivation.

From the exceſſive ſeverity of the ſalivation excited by mercurial unction, and by fumigation, and the painful ſuffocating regimen, the moſt fatal conſequences enſued, and Mercury from this abuſe was reprobated by many even of the faculty. The remedy and regimen was little leſs dreaded by the afflicted than the diſeaſe itſelf, or even death. A Spaniard therefore, G. F. de Oviedo, determined to embark for Hiſpaniola, and to learn if the Indians there had ſtumbled upon any method of cure. Their remedy he found was an aqueous decoction of guiacum, which was given for drink. Oviedo (1517) returned back to Spain with this ſecret, commenced Pox doctor, and in that trade acquired a large fortune. The European cuſtom then was to give firſt a purgative, the patient was next immured in a cloſe heated room, and twice in the day, at different intervals, he drank about a pint of ſtrong Guiacum decoction made warm, after which he was covered up in a warm bed, and ſweated two or three hours: he was next in ſucceſſion wiped dry, and light nouriſhment of the vegetable kind, with bread well baked, given: if weak and debilitated, chicken broth, and a little of the fleſh was allowed. This proceſs was continued 30 or 40 days, and in that interval a purgative was two or three times given. The weak decoction of Guiacum was his common drink, and towards the end of the diſeaſe more nouriſhing food was preſcribed. Numbers of tender or diſeaſed conſtitutions ſunk under this rigid diſcipline, or recovered with broken conſtitutions, and in numerous inſtances Guiacum failed to effect a cure: men of the higheſt rank periſhed in miſery under the corroding ulcers, after being drenched with decoctions, and ſweated to ſkeletons. The Saſſafras and Sarſaparilla were ſoon after imported from America, and their decoction extolled in the cure of the venereal diſeaſe.

In the mode of cure by fumigation, many ſuffered dreadful inflammations of the eyes, others had their gums looſened ſo that the teeth fell out; the metallic fumes were highly noxious to the brain and nerves, and to diſeaſed lungs; the cure after all was found full as tedious and much more uncertain than that by unction. Fumigations from long fatal experience were at length reſerved ſolely for obſtinate or deſperate caſes, that is, when the eroſion was ſo great as to threaten the immediate decadency of any material part, the palate, uvula, or penis, fumigations conducted through a tube to the ulcers were ſometimes found ſpeedy remedies. I. de Vigo (1514) had recommended the red mercurial precipitate as a powerful application to venereal ulcers.

A GONORRHOEA or ſimple Clap, which commonly manifeſts itſelf a few days after infection by heat of urine and diſcharge of mucus from the urethra, is not mentioned as a venereal ſymptom until 30 or 40 years after the introduction of the pox into Europe. If no omiſſion has been made in the different deſcriptions, this is extremely ſingular. We are equally embarraſſed to account for the firſt rudiments of the diſeaſe at Hiſpaniola. Some Authors report, that the infection was not confined to Hiſpaniola alone, but prevailed alſo in Peru, when conquered by Spain. At preſent all the ſymptoms of the Venereal Diſeaſe are of a leſs virulent nature, which we might reaſonably conclude would be the natural conſequence of the cure being now ſo well known.

A GENERAL exchange of diſeaſes and remedies ſoon enſued between Europe, and the new diſcovered continent of America. In return for the venereal infection, the Europeans *firſt* communicated to the American Indians that dreadful ſcourge of the human race, Small-pox: there it raged with greater mortality than in any part of Europe, and at different periods committed ſuch inexpreſſible carnage as had nigh depopulated that continent. In 1520 the contagion was imported into Mexico by a negro ſlave of Spain, when half of thoſe infected died of the diſtemper: in 1588 it was carried into Peru, and ſtill later into Paraguay, where the Small-pox are ſaid to have proved more fatal than in any other part of the world, hardly any recovering from the diſeaſe. With the poiſon of the Small-pox we gave in recompence to America ſome ineſtimable preſents. The ſugar cane, all the domeſtic animals which feed, cloath and labour for man, the ox, the ſheep, and the horſe were tranſported from the old world to the other ſide of the Atlantic. We firſt taught them the uſe of iron, without which metal, agriculture cannot be properly carried on, foreſts cut down, moraſſes drained, ground tilled, nor almoſt any of the uſeful arts and manufactories advanced to perfection.

In conſequence of the firſt long ſea voyages, a conſtant diet of ſalted meat, and other groſs food, together with the want of freſh vegetables, the Scurvy, a diſeaſe very little known, ſeldom even glanced at by the ancient writers, and then in very obſcure terms, made ſevere havock amongſt ſeamen. Vaſco de Gama and Magellan, loſt the greateſt part of their crews by the Scurvy, and from their journals we became furniſhed with the firſt hiſtory of this ſea tyrant. Numbers of ſucceeding navigators were equally unfortunate, until the true cauſe and cure were diſcovered. The ancient mariners, who had only ſtars to direct their courſe, who were ignorant of the loadſtone, and other modern improvements in navigation, and who rarely ventured to any conſiderable diſtance from lands or capes, were not, ſo far as can be gathered from hiſtory, or the chronicles of medicine, afflicted with this diſeaſe. Hippocrates has been thought by ſome to include the Scurvy under the title of large Spleen, which he imputed to drinking ſtagnating unwholeſome waters: he repreſents the diſeaſe as attended with tumefied and putrid gums, ſtinking breath, unwholeſome colour of the countenance, and ulcers in the legs. A ſimilar diſeaſe is deſcribed by Cœlius Aurelianus, and by the Arabian Phyſicians, which they all rank under the term Lienoſi, and aſcribe to a diſeaſe of that organ. It is recorded by Pliny, that part of a Roman army when encamped on the banks of the Rhine, had putrid gums, and foul breath, their teeth were looſened, and fell out; all genuine characteriſtic ſigns of Scurvy.

I BELIEVE that in the ſouthern climates of Greece, Rome, Arabia, and Perſia the Scurvy was very rare, and from that cauſe probably ariſes the ſilence of their phyſicians. Not that it is impoſſible for the diſeaſe to be generated in warm latitudes,

tudes, even on land; we know a few inſtances in modern times, where ſome parts of Italy have been ſeverely annoyed by it; and the exciting cauſes can be traced to particular diet, a cold ſeaſon and moiſture: at ſea it is very frequent amongſt naval ſquadrons in the tropical regions. The late ſurrender of Minorca, from this diſeaſe amongſt our troops, is freſh in every one's memory. Land ſcurvy is mentioned by ſome German writers ſo early as 1500, and in the courſe of that century is deſcribed by many medical authors of the continent as infeſting the Baltic Coaſt, and all the northern parts of Europe, eſpecially in the neighbourhood of moraſſes, or near the ſea coaſt.

The Scurvy is well delineated by a northern Hiſtorian Olaus Magnus in 1555; near the ſame time Ecthius, Rouſſeus and Wierus recommended the vegetable antiſcorbutics, and ſweating once daily to be the beſt means of cure. It was then, as at this day, diſtinguiſhed by laſſitude of the body, averſion to motion, putrid, ſpungy, and ulcerated gums, offenſive breath, ſallow complexion, ſwelled legs; and by degrees ulcers, black or bruiſed blotches in the ſkin; in the more inveterate ſtages, rigid tendons at the hams, &c. Eugalenus, a German writer, in the beginning of the following century, imagined the Scurvy to be intermixed in many diſeaſes, and multiplies the ſymptoms beyond all bounds of propriety. Sydenham ſays, that in his days the two great ſubterfuges of phyſicians were malignity and ſcurvy, which they blended amongſt all diſorders. In the preſent century, a correct portrait is drawn of the ſcurvy, by Backſtrom and Kramer of Germany: from the laſt author's narrative, the imperial troops ſuffered prodigious loſs in Hungary by this diſeaſe; freſh vegetables could not be procured, and all the drugs of the ſhops were tried to no purpoſe. In Germany, ſeveral armies and beſieged garriſons, where freſh vegetables were intercluded, have at different times been deſtroyed by ſcurvy. In Holland too, among the lower claſs eſpecially, it was formerly a univerſal epidemic diſtemper, owing to their ſalted and groſs diet, foul ſtagnant waters, foggy climate, and marſhy ſoil. Throughout all the northern kingdoms of the continent, particularly in the winter ſeaſon, and in Holland, amongſt thoſe who dwelt in moraſſes, or near the ſea coaſt, Scurvy in the two preceding centuries made cruel ravages. Numbers of the new emigrants to the North American colonies, and to Newfoundland, were deſtroyed by the Scurvy. The North Americans were at length taught by the Baltickers and Swedes the ſovereign benefit of drinking a fermented liquor of fir tops, melaſſes and water, and called by them ſpruce beer: this was found an excellent ſubſtitute for the want of freſh vegetables. The induſtrious Dutch made drains and canals to carry off water, and truſted the reſt of the cure or prevention to pickled cabbages or ſour crout. In ſome Northern kingdoms of the Continent, an acidulated bread, and a ſour drink uſed by the Ruſſians, powerfully reſiſt the Scurvy. In Anſon's voyage, made in the preſent century round the globe, the Scurvy appeared in the moſt virulent ſtages; the powerful and ſpeedy effects of lemons, oranges, and of various freſh fruits and vegetables, were there likewiſe manifeſted in a ſurpriſing degree. Phyſicians availing themſelves of all the information regiſtered in different ſieges and diſaſtrous voyages, and in countries where the Scurvy is Epidemic, the cauſes and cure of this diſeaſe are now known with the moſt unerring certainty.

Another new diſeaſe, called the Engliſh or Sweating Sickneſs, firſt broke out in 1483 or 85, in the army of Harry the Seventh, on his return from an expedition againſt France, to the port of Milford in Wales. In the ſpace of ſixty years, it returned again at five different intervals, and always in ſummer; but happily, in the courſe of a ſingle month, its devaſtation was conſiderably abated. A ſimilar diſeaſe raged in ſome parts of the Continent, from whence, probably, the infection was imported into England. In 1529, for the firſt and laſt time, it harraſſed Holland and Germany, and multitudes were deſtroyed. In 1713, it returned back to England from the Continent, but raged here a ſhort time only, and has never ſince been heard of in this Iſland, nor ſo far as I know in Europe. At the firſt attack many thouſands in London were ſnatched off in three hours ſickneſs; but experience taught them, that lying in a warm bed, cloſe covered up from the external air, continuing uninterrupted ſweats for twenty-four hours, and avoiding with the utmoſt

moſt care all cold, or ſtoppage of the ſkin, the ſick, by theſe ſimple precautions, generally recovered.

The ſucceſs of ſweating, and the danger of catching cold in this diſeaſe, probably, was one motive in influencing Phyſicians, who reaſoned from diſtant analogy, to preſcribe warm rooms and a fiery ſweating regimen in the Small-pox. An idea too drawn from Chymiſtry, a ſcience then growing into repute, eſpecially in Germany, of a proceſs taking place in the blood, ſimilar to the fermentation and deſpumation of liquors, contributed, I ſuſpect, to rivet the Medical faculty in this pernicious practice. Thouſands continued to be ſweated, ſuffocated, and ſtewed to death in their own poiſonous effluvia, until at length Sydenham, in the 17th Century, ſtretched out his hands, to ſuccour the cauſe of humanity. It is clear, the modern Phyſicians could not adopt this fiery practice from the Arabians, who directed the moſt refrigerating and oppoſite regimen in the Small-pox.

About the commencement of the 16th century, an inſtitution at that time extremely conducive to the improvement of the Medical ſcience in this iſland, I mean the College of Phyſicians in London, was eſtabliſhed by Royal Charter. Linacre, an intimate friend of Eraſmus of Rotterdam, a man of claſſical literature, and phyſician to Henry the Seventh and Eighth, by his intereſt with Cardinal Wolſey, the firſt miniſter,

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obtained the royal aſſent to this ſelect medical incorporation. Phyſicians, after a regular courſe of Medical ſtudies, and being dignified with a Doctorial diploma at ſome univerſity, were, previous to admiſſion into this ſociety, to undergo another examination, and were afterwards authoriſed to practiſe within the City of London, and ſeven miles around it. The College had alſo authority to inſpect Apothecaries ſhops, to enquire into the quality and compoſition of their drugs, and to puniſh frauds. To them likewiſe was committed the regulation of the Pharmocopœias, thoſe public and printed regiſters of drugs, their compoſitions and preparations. A late Act of Parliament gives the College the additional privilege of licenſing, and taking under their juriſdiction, the receptacles of inſane perſons, or mad-houſes. Before the eſtabliſhment of a medical College, the Biſhop of London and the Dean of St. Paul's, poſſeſſed the privilege of vending licenſes or diplomas to the laity, clergy and empiricks, to exercise the profeſſion of Phyſick and Surgery within the city and ſuburbs, and the Biſhops of different dioceſes over the kingdom poſſeſſed, or, at leaſt, uſurped a ſimilar power.

By ſome monkiſh abuſe of the above medical inſtitution, the honours and privileges of the London College are monopolized by a very ſmall club of Phyſicians, calling themſelves *Fellows*, whoſe only merit, or pretenſions to ſuperiority, conſiſts in having ſtudied Medicine at Oxford or Cambridge. I will not, with Dr. Mandeville, ſay, that a Man may as well learn to be a Turkey merchant, as to be a Phyſician, at either of the Engliſh univerſities. I ſee no reaſon why, under new and proper regulations, Medicine might not be as well taught there as at Leyden or Edinburgh; but that has not hitherto been the caſe. On the other hand, I can ſee no plauſible nor public pretence for excluding thoſe who have really ſtudied Medicine as many years, at other univerſities, as any of the Fellows of the College, from an equal participation, after the uſual examination, of all the privileges of the latter. Inſtead of this, what is called a *Licenciate* of the London College of Phyſicians, (and there are ſome of that deſcription now alive, who were, probably, born at the beginning of the preſent century) after examination and approbation by a few of the Fellows, pays down fifty pounds, in return for which, he receives a ſcrap of parchment, authoriſing him to practiſe Medicine in London and its ſuburbs, but is admitted to no other privilege whatſoever of the College: nor can I diſcover, with what right or propriety a mere Licentiate aſſumes to himſelf the empty title of *Member* of the College of Phyſicians, within whoſe walls, after examination, he is never allowed to enter. In fact, were the College to inſiſt upon the right of examining every Phyſician, who practiſes in London, they muſt either examine him as a Fellow, or be ſilent.

Linacre was the firſt founder of two medical chairs at Oxford and Cambridge, where annual lectures were ordained to be read on Hippocrates and Galen. From this era, Medicine, in Britain, begins to aſſume regularity in the form of its ſtudies, and to be placed upon a more reſpectable footing: but it was not until two centuries later that an anatomical theatre was erected at Oxford. In the reigns of Harry the eighth, and the ſhort minority of his ſon Edward the ſixth, the firſt Hoſpitals for ſick and mad patients, Bartholomew's and Bethlem, were erected in London. Medical Lectures began firſt to be read at Leyden in the 17th century. Edinburgh did not begin before the preſent Century to teach Medicine.

Surgery, at the beginning of the 16th Century, was held in contempt in this Iſland, and was practiſed indiſcriminately by Barbers, Farriers, and Swine-gelders: the Barbers and Surgeons Company continued for two hundred years after, both in London and Paris, to be incorporated. In Holland, and ſome parts of Germany, even at this day, barbers exerciſe the razor and lancet alternately. The Surgeons Company in London have now diſengaged themſelves from the diſhonourable connection, which levelled them with the profeſſion of a barber: they are now likewiſe authoriſed to examine, and to grant certificates to young Surgeons, which qualify them to purchaſe, or to be appointed to, a medical commiſſion in the army or navy. Frederic Hoffman, a celebrated German

man phyſician, who wrote in the beginning of the preſent century, in his "Medicus Politicus," gravely inculcates this caution, "Medicus nimiam familiaritatem cum Chirurgo non ineat," and Stahl, his colleague, ſays, "officium medici "requirit ut ne chirurgis multo vero minus tonſoribus internus mercurialium uſus pro excitando ſalivatione unquam permittatur." If ſuch interdictions prevailed in England, the majority of our Surgeons would ſoon become bankrupts. Some allowances muſt be made for the ſtiff formality, and ridiculous vanity of German etiquette, which appears to have infected even Hoffman. Britain, to its honour, has taken the lead of every European nation, in this and many other inſtances, and has broke the manacles of abſurd cuſtom and blind prejudice: the ſciences and uſeful arts, and amongſt theſe, Surgery, here flouriſh under the benign ſhadow of opulence and commerce; philoſophy is neither debaſed by ſuperſtition nor by ariſtocratic pride, nor genius doomed to languiſh, by being excluded from emulation and liberal encouragement. Beſides, as medicine, as conducted with us, the injunctions of Stahl are totally inapplicable. In our army and navy, and throughout this Iſland, the ſame perſon commonly officiates as Phyſician, Surgeon, and Apothecary. Truth requires me to add, that the medical eſtabliſhment, both military and civil, in this kingdom, calls loudly for Parliamentary inveſtigation: from that body alone the cure can be adminiſ-

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tered. To enter into particular proofs of this aſſertion, would lead me into too wide a digreſſion from the hiſtorical path.

A NEW invention at the revival of literature, the art of engraving pictures on copper-plates, for which we are indebted to Italy, contributed eſſentially to the advancement of anatomy, natural hiſtory, ſurgery, and of the various arts and ſciences. By this medium, a ſtronger repreſentation of different objects was fixed in the memory, than could be acquired from any deſcription however correct, but unaſſiſted with plates, and the expence was moderate.

In ſketching out the medical and ſurgical diſcoveries of the *laſt three hundred years*, and of natural philoſophy, ſo far as it is connected with medicine, I ſhall follow the natural order and diſtribution of the different ſubjects, rather than adhere to a ſtrict chronological detail of names and writers. I begin, for example, with one branch of medicine, anatomy and phyſiology, or any other, and purſue it as cloſely, and with as few diviſions as poſſible, in regular progreſſion through three centuries. He who would undertake to execute this arduous taſk compleat, to relate minutely the infinite variety of medical and philoſophical writings in this interval, and to dwell, with critical preciſion, upon the faults and perfections of each author, muſt expect to fill many folio volumes: the undertaking would be ſufficient to exerciſe the talents and induſtry of the greateſt genius, during a long life; the Author ſhould likewiſe be poſſeſſed of ſubtile diſcernment and boundleſs erudition. In the ſhort, and, I acknowledge, the ſuperficial compendium here exhibited, I have attended more to important diſcoveries and improvements in medicine, than to a detail of claſhing conceits, and a large vocabulary of proper names. Thoſe who wiſh to be introduced to a univerſal library of medical and ſurgical books within the above period, will find an ample magazine in Vander Linden and Merklin, and above all in Haller's collection, the title of which is, "Haller's Boerhaave's methodus diſcendi artem medicam;" they have alſo pointed out the beſt editions of the different Authors, which is an important index to purchaſers. Haller truly obſerves, that the periodical diaries and criticiſms upon the different books and pamphlets, publiſhed on the arts and ſciences in the preſent century alone, are almoſt infinite. Such are the Literary Journal of Italy; the Bibliotheque Raiſonne of France; the Reviews of Liepſic and London, &c. which now are accumulated to many hundred volumes. What muſt be the magnitude of the originals when a few extracts and criticiſms are ſwelled to ſo huge a ſize? Thoſe who are acquainted with the manufactory of ſuch anonymous criticiſms, will think it prudent very frequently to diſtruſt their panegyric and their cenſure. Amongſt this literary hoſt, there are ſome excellent maſters, many are fallen into diſgrace, and by far the greateſt number went off the ſcene like ſpectres; they were either abortions, or chryſoms that periſhed in the birth, or in the firſt month.

ANATOMY AND PHYSIOLOGY.

BY tracing the moſt important and uſeful diſcoveries, not only in Anatomy, but in all the other branches of Medicine, we ſhall ſee what the ancients had left undone in this Science, and where the moderns have ſupplied their defects, or corrected their errors. To have tranſcribed all the ancient Anatomy and Phyſiology, would have filled ſeveral volumes, and few readers, I preſume, will regret the omiſſion.

HUMAN Anatomy, which had originally grown up, and had died away at Alexandria, began firſt to be revived by the modern Italians and Sicilians. So early as 1151, Anatomy was taught at Bononia, in Italy: a law was alſo made in Sicily, by Frederick the IId, ordaining that no one ſhould practiſe Surgery, without previous inſtructions in Anatomy. Jacobus Carpus, formerly mentioned amongſt the writers on the Venereal Diſeaſe, had diſſected one hundred dead bodies. It is, however, from the epoch of A. Veſalius, (1539) a Phyſician of Bruſſels, in Flanders, and cotemporary with Charles the Vth, that we muſt date the origin of modern diſcoveries in Anatomy. I know of no original diſcovery in this ſcience, either in England, France, or Germany, before the beginning of the 17th Century. Mundinus and Benedictus, who reigned in the 14th and 15th centuries, as text-books in moſt of the Italian ſchools, had not ſoared beyond the rank of tranſlators and commentators.

The fame of this modern Herophilus early procured him an invitation from Italy, to fill the public anatomical chair. There Veſalius's acute criticiſms and detection of Galen's errors, raiſed him many enemies amongſt the implicit bigots to that ancient oracle, whom they had been taught to revere as infallible. Veſalius's chart of the human ſtructure, his deſcription and plates of the bones, muſcles, and blood-veſſels, leave all the ancient treatiſes on this ſubject at a great diſtance.

G. Fallopius (1555) a pupil of Veſalius, is generally, but erroneouſly, called the firſt diſcoverer of thoſe two tubes depending from the womb, and named after him, the Fallopian tubes. The original merit, however, is due to Herophilus. We have learned that, like the horns of a ſnail, they have the power of erecting themſelves when conception takes place, and to embrace the Ovaria, placed likewiſe on each ſide of the abdomen, from whence they convey the impregnated ovum into the womb. The revival of this diſcovery gave a new turn to the ſyſtems of generation broached by Hippocrates, Ariſtotle and Galen. Fallopius firſt began to unravel the internal ſtructure of the ear: the ancient anatomiſts had gone very little beyond the tympanum or drum, and the interior parts of this rocky cavity were unexplored. He corrected ſeveral errors of his maſter, and deſcribed ſeveral muſcles before unobſerved, particularly about the head, throat and palate.

B. **Eustachius**, who lived at Rome towards the cloſe of the ſame century, from the number of his diſcoveries and improvements, deſerves to be called the Prince of Anatomiſts. He explored the internal parts of the ear, and the ſtructure of the teeth with conſpicuous induſtry: he diſſected the eye minutely, and diſcovered ſeveral muſcles in the face, eye, ear, throat, back, and genitals, overlooked by Veſalius. He deſcribed the ten pair of nerves that are ſent out from the brain through different apertures of the ſkull, and traced with uncommon labour and acuteneſs the whole intricate courſe of the abdominal nerves. He diſcovered the thoracic duct, but was ignorant of its origin. His deſcription and plates of the kidneys, and ureters, and of the female organs of generation, are extremely accurate. Above all, his plates or general ſyſtem of the blood-veſſels and nerves, branched over the whole body with the muſcles in their natural ſituation, are the admiration of poſterity, and are copied by many ſucceeding Anatomiſts: with Albinus's explanation they are moſt perfect. By ſome accident they lay buried upwards of a century after the Author's death.

Fabricius ab Aquapendente, together with J. Sylvius, diſcovered the valves or flood-gates in the veins, which prevent the blood from regurgitating backwards; muſcular motion muſt preſs it forwards to the heart. Their uſe was better underſtood through the late diſcoveries of

Harvey. In explaining the ſtructure of the muſcles, Aquapendente refuted ſeveral errors of his predeceſſors. Beſides an excellent ſurgical ſyſtem, he wrote on the abdominal viſcera, the ſtomach and inteſtines, and on the incubated egg and generation.

F. Plater diſcovered the true uſe of the Cryſtalline Lens, and that this humour ſerved merely as a convex lens, to viſion.

Sanctorius (1614) in Italy, aſcertained by weights and ſcales the daily quantity of nouriſhment and fluids conſumed by himſelf, and the proportion which was carried off by the different emunctories or outlets of the body. The ancient Phyſicians were not ignorant of the cuticular perſpiration, but the quantity had never before this Author been determined by the balance. Sanctorius proved, that the cuticular diſcharge and inſenſible tranſpiration by the pores of the ſkin was greater than any other evacuation of the body; that in him at leaſt, it was even equal to half the food and drink conſumed. He examined the effects of cold, heat, ſeaſons, different foods and drink, paſſions of mind, ſleep, waking, and of all the nonnaturals in increaſing or diminiſhing this cuticular exhalation. He proved alſo that the ſkin, on certain occaſions, inhales moiſture from the atmoſphere, and that the body by this means is ſometimes increaſed in weight. In thoſe ineſtimable experiments, Sanctorius continued with rigid perſeverance during thirty years, and has very wiſely condenſed the general reſult into a ſmall volume of Aphoriſms. Different ſeaſons, climates, modes of diet and life, and the variety of human conſtitutions, will render Sanctorius's rules or aphoriſms not univerſally applicable, nor free from exceptions. He makes the proportion of perſpiration too great, and aſſigns to the nocturnal too large a ſhare: later experiments which I ſhall relate, have amended ſeveral of Sanctorius's errors.

W. Harvey (1628) in Britain rendered his name immortal by another ſignal diſcovery, the circulation of the blood, which engaged numbers of pens in its defence and oppoſition: amongſt his opponents we find the names of ſome eminent Anatomiſts, who actuated by envy wiſhed to rob him of the merit of this diſcovery. Harvey eſtabliſhed, by incontrovertible experiments, the circulation of the blood through the body, and the inceſſant rotatory motion of the whole crimſon torrent by the heart, arteries and veins, ſo as to make many compleat circuits round the body, in the ſpace of twenty hours. The leſſer circulation through the lungs had been mentioned by Galen, and by two of the moderns, Servetus and Cæſalpinus, an Italian botaniſt; it remained for Harvey to put the finiſhing hand to this glorious diſcovery, and to extricate this moſt eſſential part of the human phyſiology from obſcurity. Harvey alſo wrote an incomparable treatiſe on the incubated egg, and the daily charges which the chick undergoes until it deſerts the ſhell: by watching its gradual growth from the embryo ſtate until it burſts from its priſon, light was reflected upon the generation of the nobler animals. In order to aſſiſt in developing the intricate proceſs of generation, Harvey was ſupplied, by Charles the Firſt, with deers, which were opened and examined at different intervals after conception. Comparative Anatomy, although we regret the cruelty that it has occaſioned, has contributed to reſolve many intricate queſtions of the human phyſiology.

C. **Aselius** (1626) had diſcovered the lacteal veſſels running through the meſentery: Galen took them for white arteries: Aſelius imagined that they terminated in the liver. Pecquet, ſoon after, diſcovered the receptacle of the chyle and courſe of the thoracic duct to its termination in a blood veſſel near the heart: from this laſt diſcovery, the ancient and common erroneous notions of the chyle, or prepared nutriment, being firſt carried into the liver for concoction into blood, were ſubverted.

J. **Riolan** of Paris, and a cotemporary with Harvey, is juſtly ranked amongſt the eminent Anatomiſts; and as a proof that the ſuperſtitious horror, which prevailed in ancient times, was no longer a clog upon medical improvements, this author boaſts of his having diſſected one hundred and fifty dead bodies. It is very little to Riolan's credit to have ſtrenuouſly inveighed againſt every cotemporary candidate, and diſcoverer in anatomy: he wrote both againſt Harvey and Pecquet, but thought proper afterwards to acknowledge his errors. Riolan wrote upon various ſubjects of anatomy: he gave new names to many of the muſcles, which at the ſame time explained their inſertion at each extremity, and conveyed an idea of their function and uſe: as a muſcular nomenclator, he is copied by ſucceeding writers.

From the beginning to the termination of the preceding, or 17th century, many other diſcoveries were added to anatomy by writers of this nation, and of different nations of the continent. Their names may ſerve in general as a tolerable ſure index of the country of each writer. Sneider deſcribed that membraneous web, which takes its name from him; it lines the noſe, palate, and eſophagus, and is filled with ſmall glands, which ſecrete a ſlimy liquor: from this, and not from the brain, he obſerved that the catarrhal diſcharge was made. Wharton wrote on the ſtructure of the glands, the teſticles and ſeminal veſſels, and diſcovered the inferior ſalivary ducts. Steno wrote on the ſuperior ſalivary ducts, and on thoſe ducts leading into the palate, noſe, and eyes; on the mucus glands of the noſe, palate, and tongue, and the ſebaceous glands of the ſkin. Peyer wrote on the glands of the inteſtines. Lower, Rudbeck, Bartholine and Nuck, diſcovered many of the lymphatic, ſerous, or abſorbent veſſels in the head, breaſt and belly, and inferior parts; ſome of them terminating in blood-veſſels near the heart, others in the receptacle of the chyle. Bellini proved that there muſt be abſorbent veſſels in all parts of the body. Wirſungius diſcovered the pancreatic duct; and Bruner wrote on the uſes of this organ. Gliſſon wrote on the liver, the vena porta, the biliary ducts, and the offices of this organ. Lower wrote on the heart. Willis and Ridley wrote on the brain, and its membranes, and on the origin and diſtribution of the nerves. R. Vieuſen is alſo an excellent Neurographer. Borelli is a celebrated theoretical writer on muſcular motion. Du Verney gave the beſt deſcription of the organ of hearing. Kerkringius wrote on the oſteology, but is excelled by Clopton Havers, who made ſeveral diſcoveries reſpecting the ſtructure and formation of the bones, the uſes of the marrow, perioſteum, and of the mucilaginous glands within the joints. F. Hildanus deſcribed the manner of preparing dried ſkeletons; and M. Lyſerus the method of diſſecting dead bodies.

To the modern microſcope and injections of the laſt century, from the middle principally to its termination, we are greatly indebted for ſubtile anatomy, more eſpecially of the blood veſſels. Malpighi, Van Hoorne, Swammerdam, De Graaf, Leeuwenhoek and Ruſch are conſpicuous leaders in thoſe minute reſearches.

M. Malpighi, an Italian, aſſiſted by good microſcopes, favoured the world with ſome admirable treatiſes on generation, and the gradual evolution of the chick from the incubated egg, with treatiſes on the brain, the glands of the uterus, the organs of touch and taſte, and on the ſtructure and uſes of all the internal viſcera. On the glands and ſecretion few writers have excelled him. His ſtudies upon theſe ſubjects were ſo eager and inceſſant, that his health became impaired, and his life ſhortened.

R. De Graaf deſcribed the generative organs of both ſexes: he traced the progreſs of generation in rabbits, and other ſmall viviparous animals, with aſtoniſhing patience, purſuing the little ovum from its earlieſt rudiments in the ovarium, through the Fallopian tube into the womb. He attempted with Malpighi, Van Hoorne, and indeed with Harvey, to prove that viviparous, equally with oviparous, animals originate from "ova." He is, I believe, one of the firſt who uſed quickſilver in minute injections, without which the veſſels of the teſticles cannot well be filled, and who deſcribed the Syphon for injecting the blood-veſſels. Swammerdam accuſes De Graaf of pilfering many hints from Van Hoorne, a Dutchman, and their common maſter; the publication of whoſe diſcoveries were prevented by an unexpected death.

A. Leeuwenhoek pretended to diſcover, by his microſcopes, little animals like tad-poles, the rudiments in embryo of the human fetus, ſwimming in the male ſemen: the mother, in this caſe, had nothing more to do than to find a lodgement for the little homuncule. This, for ſome time, ſhook all the former ſyſtems of generation. Others, however, appealed to microſcopical experiments, and denied that there were living animals viſible in the male ſemen. A third party affirmed, that the ſemale liquor preſents the ſame appearances. The various diſputes reſpecting generation ſtill remain intricate and unſettled. In theſe controverſies curioſity may be gratified, but wiſe men will think it prudent to ſuſpend their aſſent. By his excellent glaſſes, Leeuwenhoek perceived the extreme termination of capillary arteries into reflecting veins: he affected alſo to diſcover a certain number of minute ſerous globules in the blood, which, when united, compoſe a red globule.

F. Rusch, of Germany, learned from Hoorne and Swammerdam many improvements in the art of injection, and of filling the extreme capillary veſſels, which would otherwiſe have remained inviſible: he has left ſeveral figures of injected preparations, and many originals. In general, his preſerved preparations are too detached, and the parts unconnected. His collection of Human fetuſſes, which demonſtrate its gradual ſize and increaſe until the 9th month, is much commended by Haller. Ruſch is the firſt who demonſtrated valves in the lymphatic or lacteal veſſels, ſimilar to thoſe in the red veins. He firſt explained the true ſtructure of the penis; the glans he found was only a continuation or appendix of the ſpungy ſubſtance of the urethra: he deſcribed the papillæ or little fleſhy eminencies of the penis, and the mucous ducts of the urethra. He deſcribed the real ſtructure of the ſkin, and ſhewed that the epidermis, or outer covering, was continued into the mouth and inteſtines. He correctly anatomized

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the heart, the bronchial artery of the lungs, and the membranes incloſing the brain.

J. Locke is an elevated genius, whoſe works exalt the cloſe of the laſt century, and the character of Britain, to the higheſt pinnacle of literary fame. In his Eſſay on the Human Underſtanding, he demonſtrated the anatomy of the human mind, the nature and extent of words, ſpeech, and language. There we behold the gradual evolution of ſenſe and reaſon, and all the complicated operations of the rational faculty, diſtinct as in a mirror. This ſublime philoſopher has weighed every thought, word and ſyllable, and has left a laſting example, to all poſterity, of the moſt profound inveſtigations, guided by cloſe reaſoning and wary inveſtigation.

To underſtand the doctrine of phyſiognomy, and the paſſions, as expreſſed in the countenance, attitudes and geſtures, Le Brun, and other writers on hiſtorical painting, muſt be conſulted.

The majority of the Authors of the preſent century, are arranged from the ſimilarity in their writings and diſcoveries, without attending to the exact chronological order of each publication. This, I conceive, conduces to order and brevity, and gives leſs fatigue to the memory.

J. Keil, a celebrated mathematical phyſiologiſt, inveſtigated muſcular motion, ſecretion, the quantity and the velocity of the blood in circulation, and the weight with which it is preſſed in the lungs: contrary to Sanctorius' Aphoriſms, Keil found the diurnal, "reliquis equalibus," more copious than the nocturnal perſpiration, and the urinary more copious than the cuticular diſcharge; he found alſo that theſe excretions were extremely variable in quantity, without any material inconvenience or injury: he confirmed the inhalation of the ſkin at particular times, and in rainy or moiſt weather. Later experiments on cuticular exhalation correſpond, in ſeveral reſpects, with Keil. Lining, of South Carolina, in N. America, found the perſpiration inferior in quantity to the urine in winter, but greater during ſummer. In A. Kau, there are many excellent obſervations on the internal and external exhalation and inhalation, and on the perſpiration from the lungs. Robinſon, of Dublin, found the diurnal ſuperior in quantity to the nocturnal perſpiration, and the ſummer ſuperior to the winter. This author's treatiſe on the food and diſcharges of the human body, on the proportions of each excretion, and on the relative proportion of the different parts and organs of the human body, has great merit. Dr. Hales, an Engliſh clergyman, made many experiments on horſes, dogs, deer, and other brute animals, which are publiſhed in his Vegetable Staticks: he attempted to meaſure the force and velocity with which the heart and arteries propelled the blood through the body; to meaſure the force of the ſtomach and inteſtinal canal, the ſtrength of the perioſteum and ligaments; and made many experiments to illuſtrate the functions of reſpiration. He likewiſe demonſtrated air to be not only an element of the blood, but of moſt other bodies, whether fluid or ſolid.

DOUGLAS, an eminent London anatomiſt, near the beginning of the preſent century, demonſtrated the true ſtructure of the peritoneum, and the manner in which it incloſed the inteſtines. He deſcribed ſeveral muſcles in the neck and palate; his univerſal compendium of the human muſcles, their names, inſertions and uſes, is in the hands of all medical ſtudents. D. Le Clerc, near the ſame period, publiſhed an equally celebrated compendium of the human bones or oſteology. A. Monro, of Edinburgh, has ſince nearly perfected the human oſteology, and the deſcription of the origin and courſe of the nerves. Cheſelden, the cotemporary of Douglas, had written a ſyſtem of Anatomy, but a later general ſyſtem of all the parts and organs of the human body, by Winſlow, is in more general eſtimation, and is a common text-book in many medical ſchools. In T. B. Morgagni's "Adverſaria Anatomica," there are a number of ſolid criticiſms on the errors of preceding Authors, and on the minute parts of anatomy. Dodart deſcribed the glottis, the functions of the voice, and the manner of ſpeech and ſinging.

THE ſtudy of anatomy is greatly facilitated by correct plates added to the bare verbal deſcription. Euſtachius had been the modern Praxitiles of this art. Cowper, of London, a cotemporary with Douglas, publiſhed large plates of the muſcles, and of the blood veſſels injected with coloured wax, which are accurately executed: his plates of the muſcles are principally copied from Bidloo, a diſtinguiſhed anatomiſt of the preceding century: a few additions have been made to them by Cowper. Albinus, the late profeſſor at Leyden, publiſhed a general ſyſtem and plates or figures of the human ſkeleton and muſcles: theſe whether viewed by the critic eye of an anatomiſt, or of a painter, diſplay a manifeſt ſuperiority above all others in correctneſs and elegance. The plates of the gravid uterus by Dr. Wm. Hunter of London, eclipſe every preceding work on that ſubject.

With reſpect to the proper mode of making preparations and injections, and of diſſecting dead bodies, much information may be gleaned from Veſalius, Fallopius, Lyſerus, Hildanus, Riolan, Ruſch, Cowper, &c. N. Lieuberken, in the Berlin Memoirs, deſcribes the manner of injecting the blood-veſſels of any organ, and afterwards of corroding the membranes by vitriolic acid, leaving the vaſcular form and wax intire. Monro, in the Edinburgh Medical Eſſays, mentions the compoſition of different injections uſed by anatomiſts for filling the blood-veſſels. The moderns were the firſt inventors and artificers of wax figures, ſo as to reſemble the human body, or particular parts: theſe are now brought to great perfection, and may yet admit of conſiderable improvement.

For diſcoveries made in the ſyſtem of ſmall tranſparent veſſels, called lymphatic or abſorbent, which open upon the ſurface of the ſkin, and into all the internal cavities, we are greatly indebted to a few modern anatomiſts: in thoſe minute reſearches, Haller, Hunter, Hewſon, and Monro have particularly diſtinguiſhed themſelves. They are not, what was formerly ſuppoſed, the ſmaller branches of arteries and veins, but a diſtinct ſyſtem appropriated to the ſole purpoſe of abſorption: thoſe placed in the inferior parts of the body, diſcharge their fluids into the receptacle of the chyle, and thoſe placed in the ſuperior parts, into the ſublavian vein; and conſequently from thence into the general circulation.

A. Haller, who lately died at Bern in Switzerland, ſhould not be mentioned without reſpect and reverence. He has made a univerſal collection of preceding anatomical diſcoveries, and digeſted them into order: to read over his voluminous anatomical and phyſiological works, one might almoſt conclude, that the ſubjects are exhauſted: every part of the human body is ſurveyed, the different functions explained, the errors of preceding authors rejected, and important additions made by his own indefatigable labours: his deſcription of the blood veſſels is unrivalled. Some regular courſes of attendance upon anatomical diſſections, aſſiſted by the careful peruſal of Haller, and a few more of the ſelect authors already mentioned, will make ſtudents ſufficient maſters of this ſingle branch of medicine.

medicine, Haller alone contains the ſum of what cannot be learned in multitudes of inferior note, and like a great river or ocean, has ingulphed the tribute of many hundred ſmaller ſtreams. No man can pretend to a critical knowledge in this ſcience, without having ſtudied Haller. Thoſe teachers of anatomy, who neglect to recommend Haller to their pupils, muſt either not have peruſed him, or are fearful, that what they often retail, as their own diſcoveries, would be found mere plagiariſms from this great man.

Physiology, we may perceive, went hand in hand with anatomy. With the ſtructure of the body, the œconomy of its different functions were at the ſame time developed; and in the ſpace of the laſt two hundred and forty years, this ſcience has been farther extended than all the preceding ages of antiquity had been able to carry it. The analyſis of the human humours and excretions, and of the bones and fleſhy parts, will be found amongſt the chymiſts, from whence they are collected by Haller. In this part of phyſiology the ancients were extremely deficient, and were conſtantly bewildered in the primary elements. In fact phyſiology and pathology, are two inexhauſtible themes, which are handled by a variety of ſects and miſcellaneous writers hereafter to be produced.

CHYMISTRY AND PHYSICKS.

CHYMISTRY, at the beginning of the 16th century, was grown into a favourite ſtudy, and a

popular

popular art in medicine. From the days of R. Bacon, three hundred years earlier, they were in purſuit of the philoſopher's ſtone, or of accelerating the coction of the baſer metals into gold, and in purſuit of a univerſal panacea to prolong life, and cure all diſeaſes. In the courſe of thoſe ridiculous attempts to make gold, and to arrive at the grand elixir, wherein numbers loſt their fortunes and their reaſon, many unexpected and valuable diſcoveries were made, not only in medicine, but in a variety of other arts. Bacon, Lord Verulam obſerves, that the Chineſe had long laboured to change the baſer metals into ſilver; quickſilver and lead are both heavier, and he conceived the attempt more likely to ſucceed, than that of converting the baſer metals into gold.

In the preceding chapter, our account of the origin and progreſs of medical chymiſtry, broke off with Baſil Valentine. To him ſucceeded Paracelſus of Switzerland, or as he ſubſcribed himſelf Aurelius, Philippus, Theophraſtus, Paracelſus, Bombaſt de Hohenhiem. His name and marvellous cures, at the beginning of the 16th century, were celebrated throughout Europe, to many kingdoms of which he had travelled for inſtruction. He preſcribed a medicine of opium and mercury in the leproſy, and foulneſs of ſkin, in the venereal diſeaſe, in ſtubborn ulcers, in chronic pains, and even in dropſies. In ſome chronic diſeaſes of the ſtomach, he gave a preparation of vitriol; copperas I preſume was the baſis, whoſe effects are nearly ſimilar to the ſalt of iron. He extolled antimony to the ſkies; there was nothing, he ſaid, equal to it in medicine. We know very little more of Paracelſus's chymical noſtrums. He wrote a voluminous treatiſe on wounds, ulcers, the venereal diſeaſe, on the theory of medicine, and on ſeveral medical ſubjects. It is, however, extremely difficult, and often impoſſible to underſtand, or to make any ſenſe of his myſtical and barbarous jargon. The wildeſt madman in Bedlam could not invent a more ridiculous rhapſody of nonſenſe and unintelligible phraſes, than are contained in the theoretical part of Paracelſus's writings. He is notwithſtanding entitled to great praiſe, by his example and efforts in introducing antimonials and mercurials into internal uſe. At the age of 47, this drunkard and prince of empiricks reſigned his breath, to the diſgrace of his boaſted aurum potabile, azophs, little demons, elixirs, and immortal catholicons.

My intention here is merely to particularize the principal advantages and abuſes introduced into medicine alone by chymiſtry. This ſcience, if we admit ſome modern definitions, ſeems unbounded. "The effects of heat and mixture upon all bodies in nature," are infinite and inexhauſtible, and there can be no end of diſtilling, ſubliming, compounding, decompounding, and a luxuriant train of ſimilar proceſſes practiſed by the Chymiſts. Taken in the moſt extenſive ſenſe, it may be connected to almoſt every art and manufactory, and they may be ſaid to borrow more or leſs from chymiſtry.

The chymical medicines have ſtrengthened the arms of phyſick, to conquer ſeveral fatal diſeaſes which had bid defiance to the weaker weapons of the Greeks, Romans, and Arabians. The ancients were almoſt ignorant of the medical uſe and effects of the metals taken internally, they rarely uſed them but in external applications. Medicine, during the laſt three centuries, principally, and by the induſtry and labours of various chymiſts, obtained from the furnaces, crucibles, and mixtures, the mercurial and antimonial remedies. From antimony principally we received tartar emetic, the crocus, and baſis of the antimonial wine, and in the preſent century the James's powder, all confeſſedly the moſt powerful febrifuges with which the world are yet acquainted. From the ſame ſemi-metal we received the ſulphur auratum antimonii, and the Kermes mineral, a celebrated medicine in the laſt century: they are now often mixed with calomel, and given as alteratives in cutaneous diſeaſes. In the 16th century, the College of Paris baniſhed antimonials from their pharmocopœias, but one hundred years after becoming wiſer, this metal was again reſtored to favour. From crude mercury and a ſtrong mineral acid were ſublimed calomel, corroſive ſublimate, and ſome other preparations of this metal, which in venereal caſes, in cutaneous foulneſs of the ſkin, in ſome chronic diſeaſes, and ſtubborn ulcers, have performed admirable cures.

Even from that poiſonous metal copper, joined to ſal ammoniac, a medicine was extracted, which in a few deſperate caſes of epilepſy has gained applauſe. The vitriol of copper joined to tartar emetic has been ſucceſsfully exhibited in ſome deſperate caſes of chronic aſthma. From ſugar of lead, and vitriol of iron, is prepared the antiphthyſical tincture which ſome have ventured to exhibit in deplorable pulmonary conſumptions; but the internal operations of lead are ſo dangerous as to require the utmoſt caution and circumſpection.

By the chymical art were obtained the mild, purging, and neutral ſalts, the ſalt of Glauber, the Sal Catharticus Amarus, the Vitriolated Tartar, and Sal Polychreſt; alſo the efficacious diuretics in dropſies, Sal diureticus and Cremor Tartari. The magneſia, a mild abſorbent and purgative, has partly ſupplanted the teſtaceous powders in the redundance of acidities, ſo very prevalent in the ſtomachs of young infants, and in the heartburn of adults. The volatile ſalts are all the productions of chymiſtry. We are chiefly ſupplied with the Sal Ammoniac in a crude ſtate from Egypt, where it is ſaid to be ſublimed from the ſoot of cow's-dung: this ſalt is ſometimes joined to the Peruvian bark, and taken internally in obſtinate intermittents: its volatile ſalt, joined to diſtilled vinegar, forms the Spiritus Mindereri, an efficacious ſudorific and diuretick in febrile and inflammatory diſeaſes. Crude ſal ammoniac is alſo uſed as a diſcutient and as an antiſeptic in ſome external applications; and its volatilized ſalt, applied to the olfactory organs, is extremely grateful in ſome diſorders of the head and nerves. From the vitriolic acid and ſpirits of wine is formed that ſubtile ſpirit called Ether, a powerful external application in removing ſome local pains, and internally a powerful and ſpeedy antiſpaſmodic.

SURGERY, from chymiſtry, drew two of its beſt eſcharoticks or cauſticks to deſtroy fungous fleſh, and to clean ſtubborn ulcers. From ſilver, and a ſtrong mineral acid, they were ſupplied with the lunar cauſtic; from mercury and a ſtrong acid, with the red precipitate. From ceruſs, or white lead and vinegar, Surgeons derived thoſe external applications ſo celebrated in ſprains and external inflammations. Lead is alſo the baſis of a few plaſters and ointments. Tutty an impure ſublimate of Zinc, and the ſublimed flowers of Zinc, are uſed in ointments, and collyriums to inflamed eyes.

A FEW other medicinal preparations obtained by diſtillation, ſhall, perhaps, be mentioned under the head of Materia Medica and Pharmacy: whether they ſhould be ranged under the Chymical or under the Pharmaceutical art is of no conſequence to the world.

TOGETHER with the above powerful remedies, ſome flagrant abuſes were obtruded into medicine by the Chymiſts. The ſtrong mercurial preparations having effected extraordinary cures in deplorable ſtages of the venereal diſeaſe, in leproſy, foulneſs of the ſkin, and obſtinate ulcers, where all the ancient remedies had proved unſucceſsful

Chymiſtry, from theſe few fortunate events, and from fortuitous and uſeful diſcoveries relative to ſeveral other arts, came to be held in the higheſt veneration, and its profeſſors puffed up with vanity and arrogance. They repreſented the ſigns, cauſes, and prognoſticks of diſeaſes, diet, regimen, in a word, all the united labours and medicines of the ancients as uſeleſs lumber. They boaſted not only to accompliſh the tranſmutation of metals, but that with one ſovereign remedy they could eradicate all diſeaſes, and by the help of a few vials of the univerſal elixir, they did not deſpair to exceed the antediluvian race in longevity, and to render man immortal. In vain promiſes of prodigious cures, and in lying, the Chymiſts were not outdone by the Aſtrologers. Their medicines were ſo rough and violent, and adminiſtered at hazard in all caſes without due diſcrimination, that numbers by their own confeſſion fell victims to this criminal raſhneſs. In the 17th century, chymiſtry was grafted into the theory of medicine, and greatly influenced the practice. The different fluids, excretions, and ſolids of the human body were analized and tortured by fire, and all the heterogeneous elements, ſeparated by ſuch unnatural violence, were reſorted to in reſolving the proximate cauſes of diſeaſes.

CHYMISTRY, in the 17th and in the preſent century, has been cultivated by men of tranſcendent genius and abilities, and intermixed with the progreſs of phyſicks or natural philoſophy: under thoſe joint heads I ſhall now embrace both ſubjects.

Until this era Chymiſtry was an occult and myſterious ſcience, and its experiments and ſecrets were carefully concealed under a jargon of turgid bombaſt, and dark alchymiſtical phraſes.

Towards the termination of the 16th century, F. Bacon, Lord Verulam, Chancellor of England under James the Firſt, laid the foundations of natural philoſophy: before his days it was very little underſtood. The ſchools and great part of Europe, were ſtill engaged in platonic and in ſcholaſtic ſubtilities, and were grown old in idle controverſies. The ancient philoſophy, this great man, whoſe name alone adorns the 16th century, conſidered as a caſtle built in the air: he adviſed mankind to ſtudy nature upon an entire new plan, to begin by experiments, to clear away the filth and rubbiſh, to erect ſyſtems upon ſolid foundations, and by ſlow gradations to aſcend in knowledge. Bacon made numerous experiments on the winds, on light, ſound, vegetation, agriculture, and upon almoſt every intereſting ſubject in phyſicks. He wrote a ſhort hiſtory of life and death, and of the comparative longevity of man and other animals. He deſcribed the method of changing ſalt water into freſh, either by diſtillation, or by percolation into a pit dug near to the high water mark of the tide. He mentions the mode of preſerving vegetables and fruits freſh for a long time, by incloſing them in jars or bottles cloſe ſtopped; and thoſe buried in the earth or ſuſpended in a deep well, contributed to their longer preſervation.

tion. He firſt ſuggeſted an idea of the thermometer, for meaſuring the gradations of heat. He firſt gave tables of ſpecific gravities, and threw out a variety of hints relative to gravity and attraction, which opened the road for Newton. He aſſigned the true cauſes of the jail fever, which in his days were aſcribed to witchcraft. The cauſes which he aſſigns for putrefaction, and the means of confining the vital ſpirit, are curious and profound reflections. His "Novum Organum: de "Augmento Scientiarum: and Nova Atlantis, or "Plan of a New Academy to improve Experi-"mental Philoſophy," are incomparable works. His vaſt comprehenſive mind embraced all nature, and in his writings may be found the original ſeeds of many of the grandeſt diſcoveries ſince made in philoſophy; and ſeveral, I ſuſpect, yet lie concealed in Bacon.

G. Galilæo, an Italian, almoſt the cotemporary of Bacon, and a much greater aſtronomer and mathematician, began to aſcertain the weight of the atmoſphere. He aſſerted the true Planetary Syſtem broached in the 16th century by Copernicus, who taught that the ſun was fixed in the center, and that the earth and planets revolved round this luminary. The ancient aſtronomical ſyſtem of Ptolemy and the Greeks was exceedingly confuſed. They imagined that the ſun and planets were carried in 24 hours round the earth. Toricelli, the ſcholar of Galilæo, invented the barometer, by which we can meaſure the ſmalleſt variations in the gravity of the atmoſphere. He wrote not only on Pneumatics, but likewiſe on Hydraulics, or the laws of fluids flowing through pipes and canals; and on the latter ſubject was followed by Caſtelli.

R. Boyle laboured in aſcertaining the weight of the atmoſphere: he remarked a new property in this element, its ſpring and elaſticity, its rarefaction and condenſation. He ſuggeſted ſeveral ingenious reflections on reſpiration: he ſuppoſed that ſome latent and ſubtile quality or principle, not then diſcovered, was conveyed in the air, which enabled it to ſupport life in man and other animals, and to feed flame. He obſerved that factitious air, emitted from ſubſtances during fermentation and putrefaction, poſſeſſed qualities deleterious to animals. He ſketched the outlines of a natural hiſtory of mineral medicated waters. He made Hydroſtatical experiments to determine the weight, preſſure and other properties of fluids. He remarks, that the action of ſtrong heat in Chymical experiments often forms combinations and ſeparations different from the natural elementary principles No part almoſt of Chymiſtry has been left untouched by Boyle, and, as a Chymical and Natural Philoſopher, he continues to maintain an exalted rank.

Stupendous mechanical effects are produced by that modern detected quality of the air, its ſpring and elaſticity, which, amongſt others, Mr. Boyle contributed to illuſtrate. The perpendicular height of the Atmoſphere is now known to be about forty-five Engliſh miles, and its gravity or preſſure upon a man's body of a middle ſtature about 32 or 33 thouſand pounds: but at the top and bottom of mountains, and in rainy or fair weather, there is a prodigious variation in its preſſure, without producing any material inconvenience or injury. The ſimple gravity of this column of Atmoſphere cannot raiſe quickſilver above 29 or 30 inches perpendicular height in a tube, nor water above 32 or 33 perpendicular feet above the level: common pumps, therefore, depending upon the natural preſſure of that element, were confined in their operation. To give effectual energy to ſeveral uſeful hydraulic machines, we now employ the elaſtic ſpringineſs of confined and compreſſed air.

The invention of the Air-Pump, in the 17th century, by Otto de Guericke, is another brilliant epoch in the annals of Pneumatics, and of experimental Philoſophy. The air-pump is almoſt as indiſpenſable in demonſtating various propoſitions in experimental Philoſophy, as the Electrical machine in elucidating the phænomena of Electricity.

Britain, near the end of the 17th century, produced one man, whoſe diſcoveries alone would have immortalized any nation. Under the penetrating genius of the great Sir Iſaac Newton, philoſophy ſeems to be almoſt exhauſted. He demonſtrated the theory and laws of light, of ſeven primordial rays or colours, and of viſion. Galen's phyſiology of viſion was groſsly erroneous. Newton explained the theory and propagation of ſounds; the true ſhape and figure of the earth, the laws of gravitation and attraction, the doctrine of the central forces, the cauſes which direct and retain all the planets revolving in their orbits: he explained the cauſe of the tides of the ocean: he calculated the diſtance of the planets from the ſun, and the quantity of matter which that immenſe globe of fire and ſeveral of the planets contained: he threw out various reflections reſpecting comets: he invented the floxionary calculation, and improved the reflecting teleſcope: he meaſured the motion and retardation of ſolid bodies moving through fluids, and the proportion of the reſiſtance to the velocity. Philoſophy, mathematics, aſtronomy, and ſcience in general were illuminated, by him, with an infinite fund of new and profound obſervations. Newton unfolded the order and ſprings of the univerſe, the great ſyſtem of the world, and the planets, and ſeveral of the moſt majeſtic ſecrets in the machinery of the creation.

Electrical fire is a modern diſcovered element, a powerful agent in the machinery of nature, and the phœnomena are probably yet in their infancy. The ancient Greeks and Romans gazed with ſtupid awe at thunder-ſtorms, and looked with religious horror upon places ſtruck by lightning.

ning. Until the preſent century, very little more had been diſcovered, than that amber, wax, or glaſs, when dry and rubbed with a warm hand, or by the friction of a cuſhion, would attract and repel down or feathers. Newton unveiled a part of the real qualities, nature, and extenſive energy of the electric fluid: afterwards in the French Memoirs, and in the Philoſophical Tranſactions, ſome papers were publiſhed on this ſubject: but the amazing powers, properties, and univerſality of this ſubtile Æther have been brought to light by the ingenious experiments and electrical apparatus of ſome later philoſophers, and amongſt the principal, Dr. Franklin, of North America. To him we are indebted for the invention of conductors, or iron rods, to be affixed to buildings, along the ſurface of which, during thunder-ſtorms, the electric fluid is carried down into the ground. By this ſimple apparatus, combuſtible magazines and grand monuments of Architecture reſt in perfect ſecurity from the celeſtial artillery. Dr. Prieſtley has collected into a quarto volume, the progreſſive diſcoveries made in this ſcience. On the Medical efficacy and adminiſtration of Electricity, we have treatiſes by Verotti, Cavallo, Birch, and ſome others.

THE Electrical fire has been adopted into the liſt of medical remedies. Shocks and ſparks directed againſt, and drawn from the affected part, have been found of conſiderable efficacy in palſies, in chronic rheumatiſms, in ſprains, in diſcuſſing hard tumours, in convulſive diſeaſes, and local ſpaſms, in contraction of the muſcles, in toothachs, and in female obſtructions. A late experimental philoſopher, whoſe writings are well known to the literary world, aſſured me, that in two caſes of external inflammation, he drew electric ſparks from the part, by which means inſtantaneous eaſe was given, and a ſudden cure performed.

It cannot be expected, in a work of this nature and diminutive ſize, that I ſhould enter into a detail of the Chymical analyſis of the four elements; of Saline, Mineral, Metallic, Vegetable and Animal ſubſtances; of the innumerable proceſſes of metallurgy; nor into a deſcription of the furnaces, crucibles, retorts, and other apparatus of Chymiſtry. I muſt reſtrict myſelf merely to point out a few of the pureſt ſources of this capacious art.

The 17th century gave birth to Helmont, Faber, Sala, Glauber, Borrichius, Lemery, Kunkel, Becher, and Homberg. The 18th century can boaſt of Stahl, Hoffman, Boerhaave, Geoffroy, Hales, Henkel, Newman, Macquer, Lewis, Pott, Black, Prieſtly, Bergman, and many more celebrated names. Geoffroy firſt invented tables of Elective attractions, which teach us to expect the certain reſult from mixtures of different ingredients; they ſerve to guard us againſt decompoſition in mixtures, and at one view preſent almoſt all the fundamental affinities between ſolids and fluids;

ids; each agent of which is denoted by ſpecific characters or hieroglyphicks, the original invention of either the Egyptians or Aſiatics. Hales had demonſtrated fixed air to be an element in the blood, and in many other fluids and ſolids. Black, purſuing the ſame path, found that the abſence or expulſion of this ſubtile element rendered lime cauſtic; and that a ſimilar principle or vapour was emitted from charcoal, and from fermenting liquors; and that it differed eſſentially from another elementary “aura” called “phlogiſton”, a new element and term in metallurgy, firſt introduced by Stahl. The ſubtile analyſis of the Atmoſpheric element, and its various impregnations and properties, has been lately revived by Dr. Prieſtly; and the rage for this particular inveſtigation, is now widely diffuſed amongſt the Chymical Sect of Philoſophers.

Some general ſyſtems and compendiums of Chymiſtry and Natural Philoſophy, or abſtract of the whole art, have been publiſhed in the preſent century. Macquer's Elements of Chymiſtry is a common compendium and text-book in ſome univerſities. C. Newman's chymical works are well adapted to medical uſes.

On Phyſicks or Natural Philoſophy, we have elementary compendiums by Muſſchenbroek, Graveſend, Martyn, and Helſham; a ſyſtem of pneumatics by Woolf; of aſtronomy, by Keil, Ferguſon, &c.

LEARNED SOCIETIES.

TO fulfil, in ſome degree, the plan of Bacon Lord Verulam, which was to collect important philoſophical facts and experimental knowledge, the different literary ſocieties were formed. The Royal Society of London was eſtabliſhed by charter in 1663 by Charles the Second. At Oxford, twenty years earlier, a literary aſſociation had been formed, but during the civil wars was interrupted. In 1666, the L'Academie Royale de Sciences was erected in France, and nearly upon a ſimilar plan to the Britiſh: each was ſupported by the voluntary contributions of its members. A volume of the Philoſophical Tranſactions, and of the French Memoirs were then publiſhed at intervals. In 1670, the Academia Naturæ Curioſorum was inſtituted in Germany: 1682 the Acta Eruditorum were publiſhed at Leipſwick. Florence alſo erected a Literary Academy. In 1699, under Lewis the 14th, the French Academy was new modelled and improved. This refined Academy came nearer to the ineſtimable model marked out by Bacon. To each of the learned members were aſſigned their diſtinct provinces for proſecuting diſcoveries: all experiments were to be confirmed in preſence of the whole body, and not to be publiſhed unleſs approved of by them: the expence of experiments and machines was defrayed by the King; and the Members were incited to uſeful diſcoveries by liberal rewards and penſions. In 1711, a Royal Literary Academy was inſtituted at Berlin, under the direction of Leibnitz. And in 1725, a Literary Academy was eſtabliſhed at Peterſbourg by Peter the Great, who allotted a houſe and penſions to the Academicians. In 1739, and 1746, the Monarchs of Sweden and Denmark each incorporated a Literary Society. Thoſe examples were followed by ſeveral other Principalities and Cities. In 1731, an Academy to promote Surgical knowledge and diſcoveries was founded in Paris. To thoſe national treaſures may be added, a few other public collections of the preſent century. Such are the Medical and the Phyſical Literary Eſſays of Edinburgh; with the London Medical Obſervations and Tranſactions.

By means of thoſe great public collections, the ſciences of natural philoſophy, including mechanicks, pneumaticks, hydroſtaticks, hydraulicks, and aſtronomy; of mathematicks; of anatomy and phyſiology, chymiſtry, botany, natural hiſtory, obſtetricks, ſurgery, and the practical parts of medicine; of agriculture, gardening, and, in a word, every uſeful art and ſcience received an immenſe ſupply of new experimental facts and obſervations: they were for a conſiderable time the repoſitories and ſtore-houſes of the collected intelligence amaſſed together by numbers of the moſt learned men throughout Europe. Boyle, Newton, Halley, and the moſt eminent philoſophers in their reſpective nations, enriched thoſe Royal Magazines with many of the fruits of their labours. On various medical ſubjects, they alſo contain a number of ſingular caſes and "Luſus "naturæ." The different publications at length amounted to many hundred volumes, and in ſuch a promiſcuous maſs it may be concluded there were a mixture of diſcordant and trivial materials. Arrangements and abridgements therefore, though not yet finiſhed, of the principal papers in the Philoſophical Tranſactions and French Memoirs, have been attempted, and with great ſucceſs. The Philoſophical Tranſactions down to 1700 have been abridged by J. Lowthorp; ſeveral other writers have continued down the abridgement to the middle of the preſent century, and have condenſed the eſſence into 12 quarto volumes. The "Memoires de l'Academie Royale de Sciences," during the firſt thirty four years have been abridged by Du Hamel, and we have a later compendium of this ſociety's works with figures and plates. Boerhaave calls the French Memoirs, "Liber incomparabilis qui palmam "omnibus eripuit, & quo nullus plus profuit "Scientiis!"

B O T A N Y.

MOST of the delicious fruits, and fragrant flowers, with many beautiful trees and ſhrubs which adorn European gardens, are the growth of Eaſtern climates, from which they were originally tranſplanted and naturalized to our ſoil.

THE induſtry of the moderns, and the diſcovery of new continents and iſlands, have made immenſe additions to botany, and to the number of plants. The great ancient naturaliſts, Theophraſtus, Dioſcorides and Pliny, had ſurveyed but a very inconſiderable portion of the vegetable kingdom. Public botanic gardens were firſt planted in Italy in the 16th century: until that event, the plants of the ancients were frequently confounded, and different plants ſold under the ſame name. The firſt Botanic garden planted in the ſuburbs of London, was in 1673. Oxford, 20 years earlier, had made a ſmall collection or nurſery of Plants.

C. GESNER, of the 16th century, is the German parent of natural knowledge and of Botany. J. Bauhine, in the ſame century, wrote three volumes on the hiſtory of Plants, and the virtues aſcribed to them by the ancients: he was followed by another able botanical commentator, and engraver of the figure of plants, F. Columna. Brunfelzius, as a botanic engraver, is amongſt the earlieſt feſt of the moderns. The ancient herbaliſts had diſtinguiſhed plants chiefly by the roots, either as bulbous, that is, compoſing one ſolid maſs, or as ramified and fibrous. An Italian botaniſt, of the 16th century, A. Cæſalpinus, introduced a more eaſy and certain mode of diſcriminating the different tribes of plants, by a reſemblance in the fructification; and in this elementary plan of claſſification was followed by ſeveral ſucceeding botaniſts.

The collectors of new plants within the laſt 300 years, from every region of the globe, are extremely numerous. The vegetable inhabitants of the torrid and frigid zones, have not eſcaped their indefatigable zeal and inquiſitive ſearch. In the 16th century, various plants of Spain and Auſtria were collected and deſcribed by Cluſius; of Egypt, by Alpinus; various European plants by Bauhine, and the other Authors already mentioned. Bacon's experiments and reflections reſpecting vegetables are calculated equally to inſtruct the philoſopher and the huſbandman. In the 17th century, various Malabar plants were collected and deſcribed by Rheede, Braſilian by Piſo, Mexican by Hernandez, Weſt Indian by Sloane, American by Plumier, Daniſh by Pauli, and Engliſh by Ray. To theſe collections, large additions have been made in the 18th century by Kempfer, Gmelin, Buxbaum, Hill, Banks, Solander, &c.

Boerhaave computes the vegetable liſt collected even in his time to amount to upwards of *eleven thouſand*; that is, including the ſpecies. Multitudes of theſe are uſed in food, in luxury and delicacies; many ſerve as aliment to the lower claſſes of animals, others contribute to ornament the foreſt, and to all the arts of man. Alas! out of this numerous catalogue, Medicine hitherto has obtained very few remedies. Including all the different vegetable ſimples, whether employed in flowers, leaves, root, bark, reſin, and gums, (and excluſive of compound mixtures) there are not in the whole, two hundred of them now adminiſtered in medicinal preſcriptions, and in the late editions of the Pharmacopeias, their number is curtailed.

To arrange this numerous progeny of vegetables under a few general heads, ſo that each plant may be expeditiouſly and unerringly diſtinguiſhed, has been the aim of botanic ſyſtems. The medical and œconomical uſes of vegetables are interſperſed throughout a variety of the Botanic treatiſes; but the object of botanic ſyſtems is to arrange them into claſſes, orders, genera and ſpecies, and by that regular diſpoſition, and a few ſtriking features, to aſſiſt the memory in diſcriminating each plant. A burthenſome vocabulary of names are in this way contracted, and under a few hundred genera, to which alone diſtinct or proper names are affixed, many thouſand ſpecies are crowded, and muſtered into ſeparate cluſters under each Genus. Syſtem, to uſe a military phraſe, may be conſidered as the tactic of Botany; certainly not as the ſublime part of that amuſing and uſeful Science.

The three renowned ſyſtems of the 17th century, were Ray, Moriſon and Tournefort's. Ray's ſyſtem was more complex than that of Tournefort. The former in his general claſſification attended not only to the fructification, but alſo to the roots, fibres, and leaves. Tournefort's Claſſes were regulated by the flower alone: theſe differences in the general ſhape of the flowers of the whole vegetable kingdom, and conſequently of the claſſes, he contracted to 14 only. He regulated the Genera by the flower and fruit; all plants ſimilar in theſe features were ranked together, and amounted to 698 genera. The difference in the roots, ſtalks, and leaves, conſtituted the different Species, which amounted to 10202. Rivinus and Hermannus attempted ſtill more conciſeneſs, and by one or two marks about the fructification to diſcriminate plants: but, on trial, this laſt ſcheme was found to increaſe confuſion, and to embarraſs the memory. Inconveniencies and defects attend every modern artificial mode of botanic claſſification. Plants cannot be diſtinguiſhed but when they are in flower, and, in the arrangement, many plants, known under different names, and poſſeſſing different qualities, are huddled together as ſpecies of one genus.

Not many years have elapſed ſince C. Linnæus of Sweden, invented a botanic ſyſtem called the Sexual, from the claſſes being formed from that part alone of the fructification, the organs of generation. His claſſes amount to 24, and are diſtinguiſhed principally by the male parts or ſtamina, either from their comparative number, their figure, proportion, connection, or ſituation. Thus, the female or piſtillum has 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 20 huſbands or ſtamina: there are thirteen claſſes of this ſort, called from the Greek Monandria, Diandria, Triandria, Tetrandria, Pentandria, and ſo on. The claſſes are again ſubdivided into a few Orders formed from the wives or piſtils, either as to number, or other ſtriking peculiarities. The genera, amounting to about 1300, are formed from a few characteriſtic marks peculiar to each, and confined chiefly to the fructification. The diſtinctions of the ſpecies are formed from various circumſtances; from the ſhape, colour, ſmell and taſte of the plant, the country, ſtation or place in which it reſides, the time of its generation, its duration, its uſes in life, and other peculiarities in the leaves, flowers, branches, ſtem, and roots. In looking carefully, therefore, at the flower of any plant, we firſt endeavour to diſcover its claſs, and from thence gradually to trace it to the order, genus and ſpecies. Linnæus's ſyſtem is allowed to afford the moſt eaſy and expeditious index for diſtinguiſhing vegetables; in other reſpects it reſembles his natural hiſtory; there is a licentious proſtitution of new-coined words, it is a dreary catalogue, and is only to be conſulted occaſionally.

THE majority of the botanic writers already mentioned, have enriched their deſcription of plants with engraved plates. To theſe may be added the botanical plates of Vaillant, Dillenius, Erhet, Jacquin, Trew, and Schmiedel. It is the plates which makes the publications in Botany and Natural Hiſtory ſo expenſive. A moſt laborious and expenſive publication, a univerſal ſyſtem, indeed, of vegetable impreſſions was executed under the direction of the late Dr. Hill. On the growth, ſtructure, nutrition, perſpiration and inhalation of vegetables, many curious experiments and entertaining information will be found, in the works of Grew, Malpighi, Leeuwenhoek, Du Hamel, and Hales; on huſbandry, and gardening in Bradley and Millar. Montalbanus, Seguer and Linnæus have collected an enormous catalogue of botanical writers; and on every branch of gardening and agriculture, theoretical and practical, an exuberant liſt of writers is collected by Haller.

NATURAL HISTORY.

THE principal objects of natural hiſtory are, to diſtinguiſh all the varieties of quadrupeds, birds, fiſhes and inſects, collected from all parts of the earth and ocean; to repreſent them in figures and engraved plates; to exhibit and deſcribe their manners, modes of life, ſtructure, propagation and duration, and every other circumſtance reſpecting them, that can contribute to uſeful information or curioſity. This is a ſtudy which unites the moſt delightful entertainment and inſtruction, and which, by analogy, conduces to the illuſtration of many parts of the human phyſiology, and of other equally intereſting medical ſubjects. That no part of nature might remain unſurveyed, naturaliſts likewiſe extend their reſearches to ſhells and foſſils, and to the ſtructure of the earth.

THE two earlieſt great naturaliſts and collectors in the 16th century are Geſner and Aldrovandus, both Germans. Bacon, with his uſual depth of penetration, has philoſophized upon this ſubject. Rondeletius directed his principal attention to the Aquatic tribe.

IN the 17th century, the curious ſtructure, generation, and propagation of the inſect tribes received material illuſtration from Swammerdam, Liſter and Merian. Willoughby attended to Birds, Severinus and Blazius to the diſſection and anatomy of various animals, Bonani and Guilker to Shells.

In the courſe of the 18th century, Valiſneri, Reamur, Geoffroy, Scheffer, Trembley, and Fabricius have written on the numerous progeny of Inſects; on Birds, Edwards, Briſſon, Latham and Pennant; on Fiſhes, Artedi; on the "Mammalia," Erxleben; on Shells and Corallines, Martyn and Ellis; on the ſtructure of the earth, Woodward; on Earthquakes and volcanos, Hamilton: theſe writers all maintain adiſtinguiſhed rank.

Various ingenious arrangements have been invented to comprehend theſe voluminous materials and ſubjects of Natural Hiſtory, the genera and ſpecies of which are more numerous and diverſified than the vegetable kingdom. In Linnæus's artificial arrangement and general ſyſtem, animals of the moſt oppoſite nature in ſimilitude, and in moſt other qualities, are frequently forced together into one group. Whoever wiſhes to go beyond mere order and dry claſſification, muſt conſult another ſyſtematic writer of the preſent century, Buffon. This is an elegant and entertaining author, who paints in the moſt lively colours, the hiſtory of almoſt every living creature that inhabits our Planet. We have only to regret, that the ſolidity of his materials are not always equal to the workmanſhip beſtowed upon them.

Public collections and Muſeums, now amaſſed and ſyſtematically arranged in ſeveral cabinets of Europe, are the proper ſchools to ſtudy natural hiſtory, and to leave correct and laſting impreſſions upon the memory: there we behold at one view, animals the moſt gigantic and minute, quadrupedes, birds, fiſhes, inſects, ſhells, foſſils, ſpars, gems, minerals and metals, collected and ranſacked by naturaliſts from all parts of the earth and ocean; there likewiſe we behold the variegated plumage of the feathered tribe, preſerved in the utmoſt perfection. Our Britiſh Muſeum was founded by Sir H. Sloane.

MATERIA MEDICA AND PHARMACY.

THE ſyſtems of Materia Medica contain a hiſtory of the vegetable, mineral and animal ſubſtances employed in medicine, their diſtinguiſhing marks, the proper time for gathering each plant, ſo as to preſerve its virtues in the greateſt perfection, and the medical uſes and effects of each. Materia medica is confined chiefly to the medicinal ſimples: the buſineſs of Pharmacy, is to deſcribe the various medical preparations, of whatever nature, and the manner of conducting the different proceſſes, and of forming the different compounds.

The diſtinction of Galenical and Chymical Pharmacy is not well defined, and tends only to confound the memory. Pharmacy embraces all the materials of medicine whether extracted from vegetable, mineral, metallic, or animal ſubſtances, and is inſeparably interwoven with Chymiſtry. The analyſis and reſolution of medicinal plants by fire, the principles which compoſe them, the ſeaſons when each of thoſe principles preponderate, and the particular parts of the plant, in which the different principles moſt abound, are ſolved by Chymical proceſſes. "It is by means of Chymiſtry, that "eſſential oils, extracts, reſins, volatile and fixed "ſalts, and alſo the neutral ſalts, and metallic "preparations are obtained." For an explanation of the Pharmaceutical veſſels, apparatus, and compound preparations, I muſt, as I have already done in Chymiſtry, and in conformity to my general plan, refer to the treatiſes written expreſsly on that ſubject; and ſhall content myſelf with a ſummary enumeration of the moſt important modern diſcoveries, errors and abuſes.

Several valuable remedies, moſtly of the vegetable claſs, (excluſive of the chymical) have been diſcovered by the moderns; many of which have been imported from America, and the Weſt-Indies. From that new world we derived Guiacum, whoſe decoction was formerly ſo celebrated in the cure of the venereal diſeaſe: the reſin of the ſame tree, or an extract made from the wood, and either in ſubſtance, or in a vinous, or in a volatile ſolution and tincture, is a medicine given often ſucceſsfully in chronic rheumatiſms; the extract is an ingredient in a few compound preſcriptions, and is exhibited in ſome cutaneous diſeaſes. Sarſaparilla and Saſſafras, from the ſame region, have long been honoured with a degree of ſecondary merit in the cure of Venereal, and of a few cutaneous diſeaſes.

The bark of a tree growing, and firſt diſcovered, in Peru, began, in the 17th century, to be preſcribed in Europe. The miſſionary Jeſuits, in *1639*, had firſt carried this divine medicine from South America to Rome, on perceiving that the Indians of Peru employed it with remarkable ſucceſs in the cure of remittent and malignant fevers. Great prejudices were fomented againſt the Peruvian bark upon its firſt introduction: it was ſold at a moſt extravagant price, and being proſtituted to an article of avaritious traffic, was too often adulterated by the venders. From this and other cauſes the bark for ſome time loſt part of its reputation. The ſticklers for Hippocrates, and old cuſtoms, were alarmed at innovations which threatened to undermine the whole doctrine of critical days, and to cure fevers with leſs riſk and more expedition. Until the preſent century, Peruvian bark was not given, in Europe at leaſt, in ſufficient quantity to produce deciſive effects, neither were its amazing and univerſal powers ſo univerſally known and confirmed in the cure of intermittent, remittent, and putrid fevers, in ſome bad ſpecies of ſmall-pox, in gangrene and mortification, and the putrid ſore-throat, in ſome chronic diſeaſes affecting the ſtomach and digeſtive organs, in weakneſs, and diſorders called nervous, and in ſome caſes of female uterine relaxation. The diſcovery of this ſingle remedy is an important era in the annals of medicine: before its introduction, the ſtomachic bitters, ſuch as gentian, chamomile flowers, and orange peel, were almoſt the only feeble remedies adminiſtered by the moderns to ſtop the paroxiſm of intermittents. The Eleutheria, or Caſcarilla bark, in appearance reſembling the Peruvian, and ſaid to be imported from one of the Bahama Iſlands, towards the end of the laſt century, was firſt uſed by ſome of the German Phyſicians; with them it is yet in conſiderable eſteem in the cure of intermittent, and of epidemical remittent fevers, and dyſenteries.

The vegetable balſams of Peru, Tolu, and Copaiba partake of ſimilar qualities, and differ only in degree. The Peruvian Balſam has been recommended to ſtrengthen the nervous ſyſtem when debilitated, and alſo to attenuate viſcid humours: the Copaiba balſam is exhibited with the ſame intention, and alſo in chronic venereal gleets, in the fluor albus, and in ſome chronic diſeaſes of the breaſt.

Ipecacoanha, a mild emetic, and Jalap, a purgative, were brought in the laſt century from

South America, and the roots of each recommended in medicine; the former, by Piſo and Helvetius, in diarrhœas and fluxes. From ipecacoanha, opium, and vitriolated tartar, is compounded a ſudorific powder, called after the inventor, Dover's powder, which is often given in rheumatiſms to promote a copious ſweat, and in that way to cure the diſeaſe. Serpentaria, or Virginian ſnake root, is commended as a diaphoretic and diuretic, and as of great efficacy in malignant and epidemic fevers: ſometimes it is joined to Peruvian bark. Seneka, or rattle ſnake-root, is likewiſe given as a diaphoretic and diuretic.

Simarouba, a bark from Guiana, is deſcribed by Deigner, and ſeveral other authors, and recommended as a ſafe aſtringent in chronic fluxes. In the ſame complaint is exhibited the Terra Japonica, an inſpiſſated juice from a ſpecies of palm-tree, a native of the Weſt Indies: with it is often mixed another agreeable aſtringent, the Tormentil root.

Rhazes, the Arabian, in ſome caſes of the ſmall-pox and peſtilential fevers, directed Camphor in a very ſmall quantity, mixed in ſome compound preſcriptions, ſyrups, and electuaries: with cooling acid fruits, it was thought to check the coagulation and putrefaction of the blood. We are now ſupplied with this medicine from two iſlands in the South Seas, Japan and Borneo. The Borneo is of a much ſuperior quality to the Japan, but reaches us ſhamefully adulterated; in ſeveral pounds there is not one ounce of genuine camphor. The Chineſe eſteem camphor in the firſt claſs of medicines, and at Borneo often pay for a ſingle pound weight, thirty-five pounds ſterling Engliſh Money. Several of our European phyſicians, Hoffman, Lind, and others, think camphor a remedy of very conſiderable efficacy in ſome ſpecies of fevers, particularly thoſe of the malignant kind. It is uſed internally and externally in ſeveral compound mixtures of the medical ſhops: in the latter caſe it is generally directed to pains, inflammations, and tumours, and to check gangrene.

From China and other parts of Aſia, Muſk, one of the ſtrongeſt perfumes, is imported; in the eaſtern countries it is accounted a great medicine. By experiments of Dr. Wall, publiſhed in the Philoſophical Tranſactions, muſk taken internally is repreſented as of conſiderable utility in ſome convulſive and hyſterical diſeaſes, and in dangerous ſtages of malignant fevers, accompanied with twitchings of the tendons, and convulſive ſtarting. Ambergreaſe, another more agreeable perfume, is recommended by Hoffman in hyſterical and nervous diſeaſes.

Blisters, made from the cauſtic fly or inſect, called Cantharides, had been preſcribed in Italy by Mercurialis in putrid fevers, but in ſome inſtances proving unſucceſsful, his life was endangered from the popular prejudice and novelty of the practice. In the following, or 17th century, bliſters were ſtrenuouſly recommended in infectious fevers, by Riverius and Etmuller. Lind, and other writers of the preſent century, have confirmed the veracity of their obſervations. Bliſters are now alſo applied, and with happy effects, over pains, occaſioned by internal topical inflammations, as in the pleuriſy, and peripneumony, and in pains of the breaſt, accompanying pulmonary conſumptions. When the ſmall-pox have ſuddenly ſunk upon the ſurface, eſpecially about the criſis, or compleat maturation of the puſtules, it is uſual immediately to apply bliſters to the ſhoulders, legs and feet.

From the Palma Chriſti, or Reſinus Americanus, an expreſſed Oil is obtained: it is a late diſcovery of the preſent century, and is now often reſorted to as a powerful and ſafe laxative in obſtinate coſtiveneſs, and in the dry belly-ach. We have ſince found the ſame tree in Italy, and other ſouthern parts of Europe. From the Brazils has been brought the Pareira Brava, the root of which is in eſtimation amongſt the Brazilians and Portugueſe in nephritic and calculous complaints; Geoffroy recommends it in ulcers of the bladder, and in the humoral aſthma.

Ginzeno root is eſteemed by the Chineſe as a great reſtorative: with us it is as yet rarely uſed. Salep is a grain uſed both in diet and medicine; in Turkey it is a celebrated reſtorative in broken or weak conſtitutions, and with water, forms a mild nutritious jelly, well adapted to the ſupport of ſick perſons, labouring under various infirmities.

Hemlock had long been in uſe as an external application to diſperſe hard and ſchirrous tumours,

but

but taken internally, had always been conſidered as a ſtrong poiſon. Lately, however, Dr. Storck, of Vienna, recommended an extract from the hemlock leaves, taken in ſmall doſes, as a powerful remedy in many obſtinate chronic diſeaſes, and in particular in ſchirrhus and cancer. After repeated trials, its ſucceſs in this corroding ulcer is found very precarious: in the moſt favourable circumſtances, it is an exceedingly ſtupifying remedy, and tardy in its effects. I am apprehenſive that the character of hemlock in cancerous caſes is likely to ſhare a ſimilar fate with the Biſhop of Cloyne's tar-water in conſumptions, or with ſoap-pills, lime water, and the liquid ſhell in calculous complaints.

THE roots of male-Fern had been retailed as a noſtrum by a French empirick in the cure of the human tape-worm or tinea, which is found ſo difficult to be diſlodged from the inteſtines. This noſtrum was purchaſed for a conſiderable ſum of money by the French King, and Phyſicians then diſcovered, that the ſame remedy had been adminiſtered by Galen in the above complaint. The filings of tin is another modern anthelmintic, or worm remedy.

ALLUM was preſcribed internally by Helvetius, as a powerful ſtyptic in hemorrhages from the uterus and lungs: it is alſo recommended by Dr. Mead in the fluor albus, and in the diabetes: externally it is uſed as a repellent and aſtringent.

DR. HILL, the botaniſt, zealouſly extols three vegetable ſimples, which had long made a part of the Materia Medica. The firſt is the leſſer Centaury, a ſtrong infuſion of which, or a vinous tincture from the leaves and roots, is an agreeable ſtomachic bitter in weakneſs, and relaxation of the ſtomach and indigeſtion: the two others are Spleen-wort in the hypochondriacal diſeaſe, and Valerian-root in nervous diſeaſes: the latter had been recommended by F. Columna in the epilepſy.

The roots of the Bardana, or common bur, are diuretic and ſudorific; decoctions of them have lately been uſed in rheumatic and ſome other diſorders, and as ſuccedaneums to the ſarſaparilla.

Some of the vegetable plants called ſtomachic bitters, and of thoſe called cordial, nervous, antihyſterical and pectoral were known to the ancients: their virtues are in general in the ſubordinate degree, and they may be found in all the treatiſes of Materia Medica and Pharmacy.

Various noſtrums and pretended remedies have been impoſed upon the public by modern medicaſters, againſt the poiſonous bite of a mad animal; ſuch are Turpith mineral, muſk, &c. thoſe who have the misfortune to meet with ſuch accidents, would act wiſely and conſult their own ſafety by attending to the maxims of the ancient phyſicians. Plaintain-leaf, applied externally, and a ſpoonful of the juice taken internally, is ſaid to be diſcovered in North America, to be an effectual ſpecific againſt the poiſonous wound of the rattle-ſnake.

The materials of medicine are not only adminiſtered ſingle, but are multiplied and exhibited as amongſt the ancients, in various forms and combinations. They are prepared in extracts and reſins, in expreſſed juices, in medicated infuſions, in eſſential oils, in diſtilled waters and ſpirits, in decoctions, in wheys, in vinous and ſpirituous tinctures, in elixirs, in ales, in electuaries, in conſerves, in confections, in preſerves, in ſyrups, in oxymels, in powders, in troches, in lozenges, in pills, in boluſſes, in lohocs, in emulſions, in juleps, and draughts, in gargariſms, in injections; externally, in lotions, plaſters, ointments, cerates, cataplaſms, epithems. Theſe variegated preparations poſſeſs more or leſs the virtues of the different ſimples, which enter into their compoſition: to treat ſeparately of each, cannot be expected in an elementary treatiſe of this nature, and I could ſay very little new upon the ſubject. From ſeveral chymical or pharmaceutical reſolutions, preparations, and mixtures of medicinal ſubſtances, powerful remedies are obtained: on the contrary, the activity of ſome ſimple medicines may be weakened and deſtroyed by heterogenous compoſition.

In the laſt century, and in part of the preſent, the pharmacopœias, and ſhops, and too frequently the ſick, were overloaded with ſyrups, and diſtilled waters, ſimple and compound, with boles, conſerves, and an oſtentatious heap of compoſitions, loathſome or inſignificant. The ſhops have, very properly, if I may be permitted a technical phraſe, been purged of a conſiderable part of this traſh. The imperial, heavenly, and alixipharmic waters, the exhilerating confections for the heart, the whets for genius, the pearl juleps, the clays, boles, dead earths, ſeveral of the volatile acid ſpirits, and diſtilled oils, the bones and hoofs of ſome animals, Egyptian mummies, dead men's ſculls powdered, and a farrago of ſuch feculence, are all baniſhed from the pharmacopœias; the ſyrups and diſtilled waters are now contracted into a moderate compaſs, together with the external applications, plaſters, ointments and cerates. By this reformation, ſick people are leſs liable to have their ſtomachs ſurfeited every hour with a jumble of drugs of no importance or efficacy. Some of theſe were ancient and profitable legacies; they were uſeleſs trappings added to the train of phyſick, and contributed to the ſtrut of myſtery and pompoſity.

Dr. Pitt, a Fellow of the London College, about the end of the laſt century, publiſhed a treatiſe on the frauds of phyſick, wherein he inſinuates, that ſome phyſicians of his time wrote large preſcriptions, and ſuch as tended to the Apothecary's gain, becauſe the people commonly give the apothecary the power of appointing the phyſician.
"The principal intention (ſays Pitt) of apotheca-
"ries originally was to prepare and compound
"medicines, they were like printers to orators,
"authors and poets, pioneers to an engineer, or

" maſons to an architect; they were the cooks of " medicine; but time and cuſtom have introduced " many innovations. The people now ſend to " the ſhops for advice in all caſes: the apotheca" ry does not, it is true, take *fees in ſpecie*, but " makes the patient pay extravagantly by intole" rable prices on heaps of medicines, and by an " overplus of many doſes. He breaks their " heart and ſubſtance with cordials, and by tricks " of ſubdividing into little parcels, ſo that in the " ſum total of the bill, many great fees are hid."

" Another cauſtic critic, Dr. Mandeville, lamented, " that in dangerous caſes the lives of the " ſick were trifled with, that they were drenched " with an extravagant medley of diſtaſteful potions, " or with candied preparations, grown perhaps " mouldy in pots, and with muddy diſtilled waters, " dead and inſipid. When medicines (ſays he) " of real force require vehicles, many natural and " more agreeable ones may be found in the ſimple " infuſion of a plant, or in coffee, tea, ſmall-beer, " whey, and wine diluted. When cordials are " neceſſary, wine is the moſt invigorating and " palatable."

How far any part of the above coarſe and ſevere cenſure will apply at preſent to medicine, or to any individual of the faculty, I pretend not to determine. There is one thing which Pitt, and all the other writers, ſo jealous of uſurpation upon the doctorial prerogative, have overlooked. Admitting, for a moment's argument, their poſition, that apothecaries are too numerous for the mere purpoſe of preparing and vending medicines, that in preſcribing for diſeaſes they go out of their province, and treſpaſs upon the phyſicians copyhold, and that often too many medicines are forced upon the ſick for avaricious purpoſes, ſtill it appears to me a natural and inevitable conſequence, that when phyſicians fees were by cuſtom in this iſland ſettled at one guinea for a viſit and advice, that the laborious and great majority of the people muſt either apply at a cheaper ſhop, or implore aſſiſtance as objects of charity. Perſons who cannot afford claret and burgundy, muſt be content with malt liquor or ſmall-beer: in the latter caſe it would be impracticable for phyſicians, however liberal and philanthropic, to devote their advice and attendance to the multitudes of diſeaſed ſupplicants.

I have often thought, as medicine is now practiſed in this iſland, that ſick perſons and apothecaries would both be benefited by the former paying a reaſonable ſum for the apothecaries viſits, inſtead of forcing him to lay all his expences upon the number and quantity of preſcriptions. There can be no good reaſons to expect, that apothecaries ſhould be ſo different from all other men, as totally to neglect their own private emolument; and to dedicate "gratis," all their time and attention to ſick perſons, nor that like Franciſcan friars they will be contented to ſubſiſt on penurious charity: they are fleſh and blood, they have mouths to eat, and families to maintain; ſome of them now receive a liberal medical education, and if they have merit, I can ſee no crime in their acquiring riches by that profeſſion. The only effectual remedy, in my perhaps ſhort-ſighted ideas, that can give the lower claſs, and the great maſs of the people, the benefit and advantage of judicious medical advice, that can leſſen the ſuperfluous multitude of ignorant medicaſters and apothecaries, is a national eſtabliſhment ſimilar to that ſupported by the ancient Romans, and at this day by the modern Italians, where Phyſicians, with fixed ſalaries, are appointed by the ſtate to viſit and preſcribe for the poor at their own houſes. Large hoſpitals alone, would be too expenſive, and it is eaſy to demonſtrate, would be inadequate to the purpoſe. If this ſcheme, ſo much wanted to be put in execution, ſhould not be reliſhed, Phyſicians might render their ſkill of more general uſe, and oftener reſorted to by diminiſhing, with unanimous conſent, their uſual fees to a half, or even a fourth; and ſtill more by preparing and compounding the medicines which they preſcribe, and for which they may find examples in the perſon of Hippocrates, and of the preſent Phyſicians of North America. This indeed might ſeem to derogate from the medical dignity, but I am not writing as the intereſted partizan of any ſect.

The moſt celebrated modern writers on Materia Medica and Pharmacy, are the following. J. Bauhine, an Italian, and mentioned formerly amongſt the botaniſts, in the 16th century, wrote a hiſtory of plants, and of the medical virtues aſcribed to them by the ancients: Haller prefers him even to F. Columna, another Italian, who likewiſe diſcriminated the Greek and Roman medical plants, and who has been called the decypherer of Diaſcorides. G. Fallopius is the author of a Pharmaceutical Treatiſe, in the ſame century.

IN the 17th century, Materia Medica received an important benefaction from C. Bauhine's edition of Mathiolus's commentary on Diaſcorides. D. Ludovicus ſelected and compiled into a compendium the eſſence of all the different chymical and pharmaceutical materials then in medicinal uſe.—A. Sala wrote de preparatione medicamentorum. We have a chymical and pharmaceutical treatiſe by Schroeder, a Materia Medica contracta by G. Marcgraave, and a Pharmocopœia by Lemery.

IN the courſe of the preſent century we have treatiſes on Materia Medica by various authors, by Boerhaave, Gaubius, Cartheuſer, Geoffroy, De Gorter, Alſton, Cullen, and Vogel: the two laſt are in great eſtimation. On Pharmacy and Compound Preſcriptions, we have Juncker's conſpectus formularum medicarum: Radcliff's Pharmocopœia; a ſmall pamphlet, containing the recipes of a celebrated London empiric, Dr. Ward; and the Pharmocopœias publiſhed by the Colleges of London, Edinburgh, and by the different medical colleges throughout Europe. Haller calls the Wirtemberg Pharmocopœia publiſhed in 1750, "compendiſſimum & pleniſſimum opus."

To theſe we may add Lewis's Diſpenſatory; and Fox's ſelect London preſcriptions; *cum multis aliis.*

The remedies, whether ſimple or compound, which each ſuppoſed the beſt adapted to every diſeaſe, are treated of, by the practical writers hereafter to be mentioned, and in the method of cure, they are neceſſarily equally attentive to regulate the quantity and quality of the diet. Some of the modern writers on Materia Medica have treated likewiſe, but ſuperficially, of dieteticks. I ſhall hazard a very few, yet general propoſitions on the latter ſubject.

Diet differs "toto cælo," amongſt different nations, and there is no leſs difference between the tables of the poor and the affluent. Happily, the human machine has the power of equally accommodating itſelf to a great diverſity of climates, air, heat, cold, and food. Nature, and the induſtry of man, have provided a moſt plentiful banquet of animal and vegetable nutriment, and of delicacies. Of the two hundred genera of the quadrupede creation, man eats of but very few; of fiſh from the ſea, and from freſh water, and of fowls and the feathered tribe, many more are conſumed by man; of grains, herbs, ſtems, leaves, roots, fruits, and ſpices, a luxuriant variety. Theſe are not only eat in the ſimple form, or at leaſt with very little preparation, except the mere action of fire, but are infinitely diverſified by mixtures, and the elaborate preparations of cookery, by fermentation, diſtillation, and many other proceſſes. Unfortunately the great maſs of mankind can only look upon theſe dainties, like Tantalus, with ungratified cravings. The majority of the human ſpecies are condemned to a fortuitous and precarious ſubſiſtence; few, compared to the whole, have the means of purchaſing luxuries and delicacies, but muſt reſt ſatisfied with the food which is cheapeſt and eaſieſt procured. To read over ſome ſpecious ſyſtems of diet, one could only conclude, that they were written for thoſe who had a coach and ſix at their doors, and a French cook in their kitchens. Amongſt moſt rude and barbarous nations, cookery is ſcarce known; ſome tribes of ſavages uſe very little more cookery to their victuals, than the beaſts of the foreſt. On the other hand, in civilized and poliſhed ſocieties, the alimentary and dietetic art, tracing each ingredient through its ſimple and crude ſtate, and afterwards as diverſified by mixtures and culinary proceſſes, is of wide extent. A moſt plentiful and tempting repaſt is ſpread out to the ſound, the valetudinarian, and the diſeaſed. To underſtand this ſubject, ſo far as books can impart information, Phyſicians ſhould peruſe the different medical treatiſes on diet, cookery, and on the preparation of fermented and diſtilled liquors. To take a ſtill more comprehenſive view of dieteticks, they ſhould inſpect the diet, cuſtoms, and manners of various nations as recorded by voyagers and travellers, of which there are many conciſe collections, and contracted compilations.

As the materials of medicine, of food, and of drink are too frequently adulterated, it is incumbent upon profeſſional men to be able to diſtinguiſh the genuine from the ſpurious. The adulteration of bread, fermented and diſtilled liquors, and of tea, are proper objects of medical dieteticks.

WRITERS *on the* PRACTICE *of* MEDICINE, THERAPEUTICKS *and* PATHOLOGY.

" HIC imprimis ſollicitus commendabo auc-" tores, nam errores hic erunt lethales aut perni-" cioſi." (Boerhaave.) Credulity in this ſubject is a dangerous rock, and there is leſs hazard of being betrayed into quickſands by believing too little, than by running into the oppoſite extreme of implicit faith. To diſtinguiſh the falſe and fabulous, and to aſcertain the degrees of credibility due to authors of this claſs, mature examination and ſound judgment are neceſſary.

THE contradictory theories and ſyſtems of medicine, and jarring maxims in the actual cure of diſeaſes, have been, and in many inſtances with juſtice, objects of ſatire. In aſſigning the cauſes and ſeat of diſeaſes, and even in the method of cure, which is the end and eſſence of phyſick, readers are frequently bewildered in ambiguity and uncertainty,

uncertainty. Contradictions in preſcriptions and practice are not alone glaring between ancient and modern phyſicians, and between diſtant countries, and univerſities, but in the ſame city, and even in the ſame diſeaſe, the ſons of Eſculapius on many occaſions differ widely. To uſe a common and proverbial phraſe, Hippocrates often ſays, *Yes*, and Galen flatly ſays, *No*. Amidſt this fluctuation and uncertainty, we are leſs ſurprized to hear in converſation, and to read ſome learned writers, who conſider medicine as a fallacious art, arraign it as a compoſition of fraud, deride it as a ſyſtem fully as erroneous, and to be depended upon equally with necromancy and aſtrology.

Medicine, we muſt confeſs, has been diſgraced with manifold abuſes; ſo have moſt profeſſions and arts, and all might be reprobated upon the ſame principles which provoked the ſpleen of ſatiriſts againſt phyſick. Partial abuſes are inſufficient to overturn general principles; and it is unfair to produce the abſurdities and ignorance of medical artiſts againſt the ſtability of the ſcience. With many doubts, myſteries, and imperfections, medicine has certain principles which are as firmly eſtabliſhed as any in mathematicks. The ſubordinate branches, anatomy, and many parts of phyſiology, chymiſtry, botany, and natural philoſophy, all admit of demonſtration. Diſeaſes themſelves are not confuſed unſteady motions of the human machine excited by ſomething hurtful. The experience of above two thouſand years, ſhews that diſ-caſes obſerve a conſtant regularity in their ſymptoms, and in ſome degree in their motions and determinations, and that each is ſtamped with ſpecific characters; the ſymptoms accompanying the diſeaſe, as a ſhadow does the body. Indeed the febrile and nervous claſs, often aſſume various faces; but amidſt all this tumultuous anarchy of acceſſary or ſecondary ſymptoms, men of judgment can in moſt caſes diſcern the true elementary type. The leproſy is now the ſame filthy ſcurf as in the days of Moſes. The epilepſy is exactly ſimilar to that convulſion mentioned in ſacred hiſtory. The whole catalogue of acute and chronic diſeaſes, have the ſame identical marks annexed to them, which we find in the Greek and Roman writers. The ſmall-pox and meaſles have not changed from the days of Rhazes, the Arabian. The venereal diſeaſe is now diſtinguiſhed by the ſame ſigns which accompanied it from America. Theſe few examples ſerve to ſhew that diſeaſes, whether external or internal, whether acute or chronic, are preſented to us over and over again in nearly the ſame form and ſhape. I ſpeak of eſſential marks and prominent features only: in degree, violence, and many other circumſtances, there are, undoubtedly, gradations and ſhades which may vary the picture.

We have likewiſe facts and demonſtration to determine the cauſes of many diſeaſes. Effluvia from putrid marſhes excite agues, remittent fevers, and fluxes; putrid and ſpecific contagions emitted from diſeaſed animal bodies, or from tainted apparel, excite fevers of a nature peculiar to each, whether thoſe happen to be the plague, the ſmall-pox, or the jail fever: the bite of a mad animal excites hydrophobia, or canine madneſs: living long at ſea upon ſalt proviſions, and without vegetables, generates the ſcurvy; multitudes of infants are deſtroyed by the foul atmoſphere of large cities. In a word, moſt diſeaſes, whether originating from external or internal cauſes, can be traced to their different ſources, either by conſtant uniform obſervation, and rational deduction, or by the lights acquired from morbid diſſections.

Again, prognoſticks wrote in Greece by Hippocrates, which foretold in that country the termination and event of diſeaſes, though not always infallible, are found, after ſo many ages have elapſed, to be correct obſervations of nature, and in different climates of Europe, are conſtantly appealed to by phyſicians. We can even meaſure, with tolerable accuracy, the annual waſte among the human ſpecies, from one year to one hundred; the waſte appears to be governed by general laws, and to depend upon natural cauſes. Laſtly, the operation, or actual effects of many medicines, reſt upon proofs equally ſolid; one medicine calms to ſleep, another vomits, another purges, another propels ſweat, another urine; Peruvian bark cures an ague, mercury the venereal diſeaſe, freſh vegetables or fruits the ſcurvy, and ſo on.

Upon deliberate reflection, even the verſatility of both ancient and modern practice, will not appear ſo aſtoniſhing, nor ſink the poſſeſſion in the opinions of unprejudiced judges. There was much leſs difficulty to deſcribe morbid ſymptoms, to diſſect human bodies, to make experiments, mixtures, and decompoſitions in bottles, crucibles, and furnaces, and to collect and arrange plants, than to diſcover remedies for the cure of diſeaſes, and the means of diminiſhing mortality amongſt the human ſpecies. Mankind at firſt were in poſſeſſion of very few, and impotent aids; the beneficial effects of the medical ſcience were during many centuries feeble, and by ſlow degrees it roſe to general uſe and importance: time, accident, reiterated obſervations and experience, added many powerful remedies, the old then became obſolete, and were relinquiſhed for thoſe of greater energy. Diſeaſes themſelves have not changed, but the practice in phyſick, obſtetricks, and ſurgery, has undergone repeated changes. I can ſee no more reaſon for our adopting, in all caſes, with abſurd awe, the Greeks and Romans as models of medical practice, than if we were blindly to copy them in ſhip-building, navigation, or juriſprudence. Beſides, different climates, ſeaſons, age, cuſtom, &c. will render ſome variations in practice neceſſary, even in the ſame diſeaſe.

Remedies, and the means of cure in many diſeaſes, have varied in the courſe of time; the virtues of ſeveral medicines yet remain problematical; drugs have had their run and faſhion; ſeveral, like the rotten bones of ſaints and martyrs, have deſcended to us by ſuperſtitious tradition; fictitious powers have been aſſigned to them, and ratified by poſitive aſſertions; a new theory has for a time introduced a new mode of practice, and with the utmoſt capriciouſneſs admitted and proſcribed medicines in conformity to the different ſyſtems of the writers. It is impoſſible to foretel what revolutions may yet enſue. All that we can at preſent pretend to ſay is, that ſuch a medicine is one of the beſt which human prudence and experience, after many trials, has yet brought to light, but better probably may yet be diſcovered. The practice, which a hundred years ago might be thought perfect, would in many inſtances be now juſtly condemned by Phyſicians and Surgeons. This part of medicine and ſurgery is a moving picture, which, with the pharmocopœias and forms of recipes, is every century undergoing ſome changes. For theſe reaſons I ſhall claſs the practical writers of each century ſeparate, and mark the riſe and progreſs of uſeful diſcoveries. In a few inſtances, however, I ſhall be under the neceſſity of breaking through the ſtrict chronological order and precedence of each writer, where the eſſential matter would ſuffer, or the memory be more confounded by too rigid adherence to mere form.

Within the laſt three centuries, Europe has generated ſwarms of practical authors and pathologiſts. They may be divided into writers of general ſyſtems, writers upon one or more diſeaſes, and of detached or miſcellaneous obſervations. Syſtems of medicine in general reſemble univerſal hiſtories; they are compilations and judicious obſervations, extracted from all preceding authors, a collection of a multitude of minute particulars, arranged in order, and under ſeparate heads: they neceſſarily include the hiſtory, ſymptoms, cauſes, prognoſticks, and cure of diſeaſes. Syſtems of pathology attend to morbid cauſes and effects.

THE practical writers of the 16th century, on the venereal diſeaſe, and on the ſcurvy, have already been mentioned. The following authors flouriſhed principally from about the middle, to the end of the ſame century. L. Duretus, an Italian, wrote Commentaries "in Coacas Prænotiones Hippocratis;" the Greek prognoſticks are arranged in better order, and the work poſſeſſes intrinſic merit: Boerhaave calls it, "Theſaurus ineſtimabilis." Lommius alſo wrote a Treatiſe on the ſymptoms and prognoſticks of diſeaſes. P. Alpinus, another Italian, at the extreme termination of this century, publiſhed an excellent book, "de preſagienda vita & morte "ægrotantium:" in this the prognoſticks of Hippocrates are collected and arranged, and to them the author has added the theory and comments of Galen. Alpinus alſo wrote a treatiſe on the medical practice of the modern Egyptians. C. Martinengi, and F. B. Donatus, "de previdendis morborum eventibus," compleat the prognoſtic writers and commentators of this period. On the "Methodus Medendi," we have L. Mercatus, and F. Valleſius, (two Spaniards) P. Perneumia, and

N. Piſo “de cognoſcendis & curandis morbis internis,” and A. Benedictus “de re Medica & curatione morborum.” J. Fernel, a Frenchman, wrote a ſyſtem of phyſiology, pathology, and medicine which was admired by his cotemporaries, but which from the ſucceeding diſcoveries in anatomy and other parts of medicine we may naturally conclude falls ſhort of perfection. Fernel is the firſt who noticed the aneuriſm of different arteries from mere dilatation; and he is the firſt who mentioned the gonorrhœa, as a ſymptom of venereal infection. Two other ſyſtematic authors of this century are J. Hollerius and F. Plater. Hollerius commented on Hippocrates, and added the notes of Duretus on the Greek prognoſtics: Boerhaave is pleaſed to call this, “nobilis & aureus liber.” A. Fæzius is a celebrated interpreter and editor of Hippocrates' works. H. Fracaſtorius wrote, “de contagionibus & morbis contagioſis.” The attempt was judicious and meritorious, and pointed out new paths for important inveſtigation, reſpecting cauſes which ſpread ſuch wide devaſtation amongſt mankind. Botallus, Joubertius, Foreſtus, and many other candidates for medical fame, flouriſhed in this century.

On Dieteticks, Exerciſe, and the general regimen of the Non-naturals, the three modern centuries preſent us with a variety of Authors. The induſtry and ſkill diſplayed by H. Mercurialis in treating of the Gymnaſtic exerciſes and baths of antiquity will ſatisfy the higheſt expectations. J. Bruyerinus, de re cibaria; J. Alexandrinus and

H. Cardanus, de ſanitate tuenda; L. Cornaro, de vitæ ſobriæ commodis; are all reſpectable Authors of the 16th century.

THROUGHOUT the dark ages, the Arabian Phyſicians had been buſied principally in larcenies from the works of the Greeks and Romans, and the Europeans afterwards from the Arabians. After the introduction of the Greek Authors, and the art of Printing into Europe, a great part of the practical writers in the 16th century, ſeem to have been employed merely in commenting upon the Greeks. It is alſo evident, from the names alone of the Authors, that Britain had not then emerged beyond a ſtate of pupillage in Medicine: none of their writers in that period (if we except Linacre and Bacon) deſerve to be admitted over the threſhhold of the Temple.

THE 17th century is more prolific than the former, in practical authors and improvements. Medicine, in the 16th, and much more in the 17th century, was divided into two ſects or factions: the Galeniſts and Chymiſts. Italy was attached to Galen; the Germans had revolted to the ſtandard of Chymiſtry, of which that verboſe and voluminous writer, D. Sennertus, properly ſtiled the German Galen, together with J. B. V. Helmont, and Sylvius de la Boe, of Leyden, were the popular leaders. A third ſect alſo then ſprang up, the Mechanic and Corpuſcularian, of which De Cartes was the leader. Hitherto the Chymiſts had been in general a banditti of irregular and vagrant empiricks, and had not, until the 17th century, compleatly forced their way into the regular phalanx of Eſculapius. Chymical theory and remedies then became the reigning taſte in phyſick. This propenſity in Germany, and the diſcovery of the circulation of England, contributed to weaken the reverence for the Galenic Theory and Practice, and for the Italian School. Until this period, moſt of the German, French, and Britiſh phyſicians had been educated in Italy. Leyden, at the end of the 17th century, became the metropolitan School of Medicine, and Paris of Surgery. It may alſo be remarked, that the great throng of writers in the 16th century, on anatomy, botany, materia medica, pharmacy, and the practice of medicine and ſurgery, were Italians, Germans and French; and that, until the 18th century, moſt of the medical treatiſes were written in Latin.

Britain, from the middle to the end of the 17th century, produced ſeveral eminent medical writers. F. Gliſſon gave a hiſtory of that infant diſeaſe, the Rickets, which are ſaid to have appeared in England only thirty years prior to his publication. Many, however, and with good reaſon, entertain doubts, whether the diſeaſe was new, or then only got a ſpecific name: they are now greatly on the decline. The rickets commonly begin to be viſible in the interval, from nine months to two years of age; and are indicated by leanneſs, muſcular weakneſs, large head, prominent belly; terminating, if not cured, either in death, or in curvature of the bones, and deformity through life.

G. Harris, the cotemporary of Gliſſon and Sydenham, attempted to inveſtigate the complaints and diſeaſes incident to young infants. To remove acidities ſo frequent in their ſtomachs he gave teſtaceous powders, and as a purgative, rhubarb. Until this century, the management of thoſe tender creatures in ſickneſs, was left to ignorant old nurſes, and rude quackery. Even at preſent, the bills of mortality, in cities eſpecially, are a melancholy proof, that the carnage made amongſt the young part of the human ſpecies, has not yet attracted that attention from medical writers, which the importance of the ſubject demands. From the ancients, Rhazes excepted, we derive very trifling information on the diſeaſes of the cradle.

T. Sydenham, the modern Britiſh Hippocrates, publiſhed, at different intervals, detached papers on epidemical and febrile diſeaſes, intermittents, remittents, and dyſenteries, upon ſmall-pox and meaſles, conſumptions, gout, and ſeveral chronic diſeaſes. He marked the prevailing epidemics of each year, the effects of ſeaſons, climate, and ſenſible qualities of the air, the exact ſymptoms and changes in the progreſs of diſeaſes, the effects of certain diet and medicines, the termination into health or other diſeaſes, and in this purſued nearly the plan of the founder of medicine. It was Sydenham's misfortune ſeldom to conſult other authors. In the infancy of medicine, his method of obſervation and practice would have been proper; but to ſuppoſe that little progreſs had been made by his predeceſſors, particularly in diſcriminating diſeaſes, was too haſty a concluſion. Dr. Lind obſerves, that Sydenham's obſervations are local, and confined to a healthy ſpot, otherwiſe he could not have pronounced a continual fever of 12 or 14 days duration, the moſt conſtant and primary fever in nature; nor would his practical rules of cure ſuit the fevers of tropical climates, nor the autumnal fevers of Europe. Another, and I preſume an erroneous opinion, entertained by this great man was, that the epidemical fevers of every year and ſeaſon were annually diverſified, and eſſentially different in their nature; that in ſhort, "the multifa-"rious operations of nature in producing a di-"verſity in diſeaſes, were impoſſible to be traced. Experience and obſervation, if I miſtake not, proves on the contrary a ſimplicity and general order in diſtempers, the autumnal remittent fevers of Europe, and thoſe of different tropical climates, are in eſſence the ſame diſeaſes, and cured by the ſame medicines. The manifeſt qualities of the air, ſeaſons, and climate will account for any other differences. If Sydenham's propoſition was true, and in the latitude he alledges, we could have no eſtabliſhed hiſtory of febrile diſeaſes, much leſs any fixed rules in medical practice, or correct prognoſticks. Sydenham's merits, however, greatly preponderate. He aſſiſted to direct Phyſicians thoughts to proper objects, to obſerve the effects of the atmoſphere and ſeaſons, and the "lædentia & juvantia" in diſeaſes; to neglect thoſe frivolous purſuits of conſtantly prying into the blood, bile, or other humours for the origin of diſeaſes, and to venture out of the leading ſtrings of antiquity. He contributed to the introduction of Peruvian bark into medicine, and to diſpel the prejudices conceived againſt this remedy; but he gave it in intermittent fevers chiefly, and too ſparingly. He deſcribed accurately the different ſpecies of ſmall-pox, and reprobated the hot fiery regimen and cloſe rooms in this diſeaſe, a practice then ſupported by ſeveral phyſicians of fame and repute.

FROM the beginning to the termination of the 17th century, there are a conſiderable number of eminent writers on different practical ſubjects of medicine. Such are, C. Piſo, de Morbis a ſeroſa colluvie. J. Wepfer, de Apoplexia, de Cicuta, de Venenis, &c. T. Willis, de Pathologia cerebri. L. Bellini, de Urinis & Pulſibis, de Morbis Capitis & de Febribus. R. Morton on Fevers and Conſumptions. C. Bennet, on Pulmonary Conſumptions. L. Septalii, Obſervationes Practicæ. M. Zuccari, and F. Ranchini, de Morbis Puerorum. V. Kettelaer, de Aphthis. F. Redi, de Vermibus. G. Ballonius, de Morbis Mulierum. B. Ramazini, de Morbis Artificum. G. Baglivi, Praxis Medica; or Miſcellaneous Practical Obſervations. N. Tulpii, Obſervationes Practicæ L. Riverii, Obſervationes; ſive Syſtema Medicinæ Practicæ. M. Etmuller, Syſtema Medicinæ Practicæ. J. Schenkii, Obſervationes Medicæ Rariores.

In explaining the medical practice of various remote Nations, the following Authors excel. G. Piſo, de Medicina Brazilienſium: J. Bontius, de Medicina Indorum & Perſarum: G. T. Reyne, & A. Cleyer, de Medicina Sinenſium: T. E. Grindler, de Medicina Indorum. The Practice of the modern Egyptians is recorded by Alpinus, whom I have, on another occaſion, mentioned.

The Claſs of Dietetic Authors, and thoſe properly relating to domeſtic medicine, are, M. Sebizius, de Alimentorum Facultate: H. Conringius, de Dieta veterum Germanorum: A. Anſelmi, de Regimine Senum: G. W. Wedel, de Dieta Literatorum. This laſt Author has written voluminouſly on a variety of Medical ſubjects. Nonnius, Vogler, Lemery, and many others, may likewiſe be uſefully peruſed on Dieteticks.

Medical Juriſprudence began in the 17th century to be the Theme of a few celebrated publications. In this claſs of writers, F. Fidelis and P. Zacchias are conſpicuous. Various inſtances occur in judicial trials, the deciſion of which is founded on the depoſition of Phyſicians and Surgeons.

On the duties, and on the moral and political conduct of Phyſicians, Claudinus, Caſtro, Bohnius and Capua have devoted ſeparate publications.

Various experiments began, for the firſt time, to be made in this century, of transfuſing blood and medicines through a pipe into the veins of brute animals; but they were found ſo dangerous and fatal, that, in all probability, no ſimilar attempts will be hazarded on the human ſpecies. The proceſs is deſcribed by J. D. Major.

THE preſent, or 18th century, is uſhered in by ſeveral writers, whoſe names can never be obliterated, but with Literature and the Medical Science.

T. BONETUS, near the end of the 17th century, in his Sepulchretum Anatomicum, collected from a variety of writers, ſince the revival of anatomy, three folio volumes of morbid caſes and diſſections, where the bodies after death had been opened, in order to explore the cauſes and ſeat of different diſeaſes. Morgagni, in his collection, called de cauſis & ſedibus morborum, Lieutaud, Haller, and many others have enriched this morbid repoſitory with ſimilar obſervations. Morbid diſſections form a new and intereſting epoch in medicine. Pathology no longer reſted upon imaginary depravities, or redundance of the elementary humours, but was founded on facts and demonſtration: the cauſes of many diſeaſes, eſpecially thoſe which originate from ſome internal derangements, the changes wrought by the continuance of the diſtemper, and the immediate cauſes of death in many febrile and acute diſeaſes, were by this means detected: the rocks upon which many veſſels had been daſhed and ſhipwrecked, were pointed out; phyſicians were taught to foreſee danger, and from misfortunes to derive more wiſdom.

Two authors, the one of Germany, the other of Holland, during a few years of the laſt, and many of the preſent century, attracted the attention of Europe: the names of F. Hoffman and H. Boerhaave are familiar to all medical men. Each has attempted to concentrate into one great ſyſtem, the ſymptoms, hiſtory, cauſes, theory, and cure of all diſeaſes. Thoſe two writers continue at this day to divide the eſteem of Phyſicians, and are at many univerſities the text-books of medical lecturers on the practice of phyſick. Boerhaave's works, particularly his "Aphoriſmi de cognoſcen-" dis & curandis morbis," are rendered infinitely more precious, by the illuſtrations and voluminous additions of his pupil and learned commentator, Van Swieten. To peruſe Hoffman, Boerhaave, and Van Swieten requires time and patience. Our reſolution is ſtaggered at the ſight of about twelve groſs volumes, in either folio or quarto; but Phyſicians cannot poſſibly diſpenſe with this fatigue. In the hiſtory, and the evident cauſes of diſeaſes, they are moſt correct, though not always infallible; in the theory, proximate cauſes, and method of cure, they muſt be followed with circumſpection, and on many occaſions abandoned. In Hoffman's works there are a multitude of caſes in different diſeaſes, with his anſwers and directions. G. E. Stahl, the colleague and rival of Hoffman, was an excellent chymiſt, and wrote at great length on different medical ſubjects, practical and theoretical.

R. Mead wrote on the influence of the ſun and moon upon human bodies, in certain diſeaſes. This, however, was not new: Galen, and Fracaſtorius had laid great ſtreſs upon the powers of the moon, planets, and ſtars. Galen imputed the power of the ſeptennary number over febrile criſes, to the lunar influence. The Egyptians and Arabians, it is notorious, were ſo enrapped in this ſcience, that they might with great propriety be called aſtrological maniacs and lunaticks. Mead alſo wrote on the ſmall-pox and meaſles; on vegetable and mineral poiſons, on the bites of mad animals, and venomous reptiles; on the plague and regulations of quarantines, and a ſketch merely of the "methodus medendi", in a conſiderable number of the diſeaſes which afflict the human body. The mention of quarantines naturally leads me now to trace the origin of this inſtitution.

VENICE, at that time the principal commercial and maritime power in Europe, was the firſt nation, who in 1494 enjoined Quarantines to be performed, not only by ſhips ſuſpected of harbouring peſtilential infection, but even if they arrived from Egypt, or other countries bordering on the Archipelago, where the plague is a frequent diſeaſe. The crew and cargo of ſhips arriving from Alexandria, and from any port in the Levant, were for a certain ſtated time, ſubjected to various regulations, and were excluded with rigid vigilance from any intercourſe or contact with the inhabitants of the port where they arrived. Every commercial nation in Europe adopted the example of the Venetians. Without ſuch precautions, all the maritime ſtates muſt for their own preſervation have abandoned the Levant and Egyptian traffick.

In the 16th and 17th century the plague raged, at different intervals, in almoſt every country of Europe. Fatal experience has taught us to guard with more circumſpection againſt its introduction into any ſea-port, to ſtifle the infection before it burſts into a flame, and to extinguiſh its lurking embers: 114 years have elapſed ſince the laſt plague, which deſolated London. In all the Mediterranean ſea-ports, they are extremely vigilant to ſhut out this dreadful malady. France wiſely permits, to Marſeilles alone, the excluſive liberty of the Levant and Turkey trade. Strange as it may appear, in the preſent century, ſeveral Phyſicians in France, and one or two in England, publiſhed and maintained this extraordinary poſition, that the plague which broke out at Marſeilles (1720) was not a contagious or infectious diſeaſe. Dr. Mead and Aſtruc exerted great pains to combat a doctrine ſo raſh, inconſiderate, and miſchievous. The authors of this ruinous hypotheſis, ſeem to have been conceited pedants, who, at the hazard of thouſands of lives, obſtinately hugged their own theories, and ſhould have been chained to the gallies, or locked up in a mad-houſe.

Formerly the quarantine code was crude and imperfect; and where the plague had once got a footing amongſt the people, the rules and police tended rather to increaſe and multiply the infection. The whole family, ſick and ſound, were

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promiſcuouſly incarcerated in their dwelling-houſe and a red croſs was made upon the door, with this forlorn motto, "Lord have mercy upon us." No perſons, but doctors, nurſes, and other attendants authoriſed by government, were permitted to enter into, or to depart from the infected domeſtic priſon: the doors were cloſe guarded, until all within were either dead or recovered. By this inhuman and fatal policy the contagion multiplied with additional virulence. The diſeaſe, whenever it appeared in any houſe, was concealed as long as poſſible, becauſe they trembled at a diſcovery, well knowing, that the whole family were indiſcriminately devoted to deſtruction. Many who had not yet fallen ſick, in ſpite of the vigilance of keepers and guards, eſcaped from their houſes, and the melancholy ſight of relations periſhing before their eyes; from their contaminated clothes the infection was diſſeminated.

Rules now, more prudent and humane, are eſtabliſhed, wherever the plague burſts over the boundaries of lazarettos. An early alarm, like that of fire, is of the utmoſt importance. The ſick when not too numerous are inſtantaneouſly to be removed to one or more diſtinct houſes of confinement, all porous materials, furniture, and apparel of that houſe are to be committed to the flames, all the domeſtic brute animals to be killed or ſecured, and ſometimes even the whole habitation to be pulled to pieces, and deſtroyed. The ſick are next to be prohibited by lines and guards from all poſſible communication with the ſound, either in perſon, by contact, goods, or correſpondence. It is now well known, that the infection can be ſpread to a very trifling diſtance by the air alone. That part of the family who remain to appearance in health, are to be ſhut up in another ſeparate building, until they perform a probationary quarantine of ſeveral weeks; and their cloathes are alſo to be burnt. The ſick, on recovery, are to be conveyed to other houſes of ſecurity, and the ſame precautions taken, during ſeveral weeks, to ſeclude them from all intercourſe with ſound perſons. When, however, from want of timely detection, the plague has ſeized upon a great number, in this unhappy extremity, the ſick muſt neceſſarily be left in their own houſes, and the ſound inſtantly removed to a ſufficient diſtance from their infected dwellings and friends, there to undergo a regular quarantine. With ſuch wiſe and tender management, the plague now ſeldom ſpreads to any diſtance amongſt the inhabitants, and is now not dreaded as a univerſal deluge, or the day of judgment.

From the following ſources a tolerable idea may be acquired of the nature of this tremenduous foe to mankind, and of the means of guarding againſt and ſuppreſſing peſtilential infection. Some confuſed accounts of ancient plagues may be found in Hippocrates, Thucydides and Galen. The great plague in the 6th century is deſcribed by Procopius and Evagrius; that in the 14th century by Guido de Cauliaco. The Plague which ravaged Niemeugen, in 1636 and 8, is accurately delineated by Diemerbrook: that which deſolated London, in 1665, has been recorded in ſeveral journals and pamphlets. R. Brookes collected a hiſtory of the moſt remarkable peſtilences during 300 years, preceding 1721; and R. Bradley (1721) collected ſome hiſtories of peſtilence. Chicoeneau made a collection of the treatiſes on the plague at Marſeilles (1720.) The London Gazette contains a ſhort narration of the plague, which laid waſte Meſſina in Sicily, in 1744. If to theſe be added Kanoldus, Mead, and the modern ordinances reſpecting quarantines, eſpecially in the mediterranean ports, our medical library on this diſeaſe will be ſufficiently ſtored.

THE nature of Marſhy Effluvia and Contagion, the cauſes which engender them, and the diſtance to which they extend, are much better underſtood than formerly. The ancients ſeem to have had very ſuperficial notions of the ſubtile nature and origin of thoſe two great ſources of mortality. Even in the days of Bacon Lord Verulam, the Jail fever was attributed to witchcraft. Here, therefore, open new proſpects and important improvements in pathology, which morbid diſſections could not have elucidated. From marſhy effluvia principally ariſe Intermittent, Remittent fevers and Dyſenteries, the Autumnal remittent fevers of Europe, and the Epidemical remittent fevers of tropical climates, during the rainy ſeaſon.

ſon. From Contagion, engendered by filth, confined air, and excrementitious human effluvia from the ſkin and breath, ariſe the Jail, Hoſpital, Malignant, and many of the ſlow Nervous fevers, varying in degrees of virulence. Fracaſtorius and Morton had thrown ſome rays of light upon theſe ſubjects; but it is to the labours and induſtry of Lanciſi, Pringle and Lind, that the world are greatly indebted for publications ſo intereſting to the community. Lanciſi, in Italy, wrote "de "noxiis paludum effluviis." Pringle wrote on the principal diſeaſes which infeſt armies, on Intermittent, Remittent Fevers, and Dyſenteries, and on Contagious fevers, bred in Hoſpitals crouded with ſick, and on board ſhips at ſea. Lind wrote on the Epidemic fevers, and Dyſenteries of tropical climates, and of hot countries; on the means of preſerving the health of Seamen and Soldiers ſent to thoſe unwholeſome regions; on the contagious fevers of crowded hoſpitals and ſhips; on the means of guarding againſt, and of extinguiſhing this ſubtile poiſon: his treatiſe on the Sea ſcurvy is a compendium of almoſt every eſſential medical obſervation upon that diſeaſe.

On the diſeaſes moſt haraſſing and noxious to armies and naval ſquadrons during war, better pilots cannot be found than Pringle, Lind and Monro. The ancients are extremely barren of information, reſpecting military medicine, and the economy of their hoſpitals. Cæſar, Polybius, Vegetius, and all the ancient writers, military and medical, have left us nearly to conjecture on this ſubject. In the preceding century, Coberus, Portius and Mindererus publiſhed ſome judicious obſervations, "de medicina caſtrenſi." In the preſent century, on Army and Naval Diſeaſes, we have Alberti, Pringle, Lind, Monro, Brockleſby, Macbride, Mezerey, Rouppe, &c. The regulations of the French military hopitals are deſcribed in Cheneviere's "Detailes Militaires," and merit peruſal.

Mr. Sutton, cotemporary with Dr. Mead, invented an ingenious and ſimple method, which is deſcribed in the latter's works, to extract foul air and ſtench out of ſhips, where it ſtagnates in the wells. The apparatus conſiſted merely in laying pipes to communicate both with the well and bottom of the ſhip, and with the common fire-place: by theſe tubes, a conſtant current or draught of air was kept up, the foul air was carried off through the fire, and was inſtantly renewed by freſh. Ventilation, either by a wind-ſail, or by pipes, is another modern invention to purify foul air in jails, ſhips, or crowded hoſpitals. Bacon Lord Verulam, I have already obſerved, had diſcovered, that ſalt water became freſh by diſtillation, and that green vegetables and fruits could be preſerved a long time freſh, when cloſe ſtopped in bottles or jars. Not many years ago, Drs. Irvin and Lind, and nearly about the ſame time, contrived to render the former diſcovery extremely commodious to mariners. A ſpiral tube or worm was fitted to the head of the common boiler, employed in cooking the ſhip's proviſions, to this was added a condenſer, as in the ordinary proceſs of diſtillation, and no additional fuel was expended. Dr. Nooth lately publiſhed a new mode of preſerving water on board ſhips at ſea, from being corrupted; which was by adding ſome quicklime to each caſk, and afterwards by a particular apparatus to throw ſome fixed air into the veſſel, ſo as to precipitate the lime previous to uſe. Time muſt yet determine on its utility. Ships, during diſtant voyages, being thus guarded againſt thirſt, and againſt the Scurvy, by preſerved vegetables, fruits, and by ſpruce beer, it is not impoſſible, ſays Dr. Lind, to provide alſo againſt famine in caſes of fire, ſhipwreck, tedious voyages, long calms, and putrified proviſions. In one ounce of good portable ſoup, is concentrated the eſſence of ¾ of a pound of beef; and one tea-ſpoonful of Salep thickens a pint of water into a jelly. A man might eaſily carry upon his back ſeveral months proviſion of this ſort. Laſtly, the uncommonly ſucceſsful methods employed by the late celebrated navigator, Captain Cook, in a voyage round the globe, to preſerve his men in health, merit the attention of both naval and medical officers in that line of ſervice. As ſuch multitudes of men now live on the ocean, the diſeaſes peculiar to this element are ſtudies highly intereſting, eſpecially to maritime and commercial nations.

A TOTAL revolution has enſued in the ancient treatment of Intermittent and Remittent fevers, and of the Malignant and Nervous: there is even a conſiderable difference between the practice of the 16th and the preſent century. Our general remedies are Antimonials and Peruvian Bark. By means of the Tartar Emetic, Antimonial wine, or James's Powders, we firſt endeavour to obtain an intermiſſion or a remiſſion of the fever, a temporary truce, when the Bark is given in ſubſtance or in decoction. Indeed ſome of the tropical remittent fevers are ſo extremely violent and precipitate, that, after a vomit, no time can be with ſafety loſt, in adminiſtering the Bark. In caſes complicated with internal topical inflammations, blood is drawn; but this depends upon various circumſtances, which I cannot here relate in detail: Pringle and Lind are the genuine fountains of information. In the Malignant and ſlow Nervous fevers, bliſters are, on many occaſions, applied with great advantage. In the cure of the Dyſentery, we truſt more to gentle purgatives at the beginning, to remove the offending cauſe, not neglecting, at the ſame time, to promote the cuticular excretion. We now know, to a certainty, the means of extinguiſhing infection, whether kindled in jails, ſhips or hoſpitals, or even that of the Small-pox, when ſuch poiſon is concentrated in wearing apparel, or any porous materials; by fire and ſmoke confined, or the heat of a baker's oven, continued a few hours, it is effectually annihilated. This too is an important diſcovery.

ANOTHER direful ſource of mortality, eſpecially to the younger part of the human ſpecies, originates from the foul Atmoſphere of Cities and large Towns. The key to this information can only be attained by Bills of Mortality. Before the preſent century, Bills of Mortality were extremely imperfect and indigeſted. The births, genealogies, and deaths of Adam's deſcendants, down to Noah and the patriarchs, are recorded in Scripture; a few chapters of Geneſis are plain regiſters of births and mortality: the Iſraelites were, at different intervals, muſtered and numbered by Moſes and his ſucceſſors, and in a few uncommon peſtilences, the devaſtation is aſcertained in the Jewiſh hiſtory. The deſcent and pedigree of kings, and other great men, have alſo been kept in moſt nations who had made any progreſs in civilization; but general annual regiſters of births, diſeaſes and deaths, are modern eſtabliſhments, and were unknown to the ancients.

ON the continent of Europe, regiſters were eſtabliſhed fifty or a hundred years before their introduction into England. In 1538, exact records of weddings, chriſtenings and burials, were *firſt* ordered by the King and Council, to be kept in every Pariſh Church in England, by either the Vicar or the Curate. This order was very negligently obeyed until 1559, in Queen Elizabeth's reign, when to prevent regiſters from rotting in damp churches, they were directed to be written on parchment. At firſt they ſeem both in Germany and in England, to have been deſigned merely to prove the birth, death, and deſcent of private perſons, and the right of inheritance in property or lands. In 1592, a year of peſtilence, bills of mortality for London were inſtituted, but were diſcontinued until 1603, another year of deſolation by the plague, which was the only diſtemper then noticed in the printed reports: in 1629, the different diſeaſes and caſualties of thoſe who died, together with the diſtinction of ſexes, were added and publiſhed; in 1728, and not ſooner, the different ages of the dead were ordered to be ſpecified in the London bills. Upon firſt inſtituting the diſtinction of diſeaſes and caſualties in the bills of the Britiſh metropolis, the primary intention was to diſcover the numbers deſtroyed by the plague, and to detect concealed murders. At Vienna, Berlin, and ſome other cities and towns of the continent, and alſo of this iſland, regiſters nearly ſimilar to London are now kept.

Bills of mortality form a grand epoch in the ſcience of politicks, philoſophy, and medicine. Public records of births and mortality are now partly become the rules of political arithmetic, but unfortunately for Politicians and Phyſicians, they are yet far too incorrect and imperfect throughout Europe. Regiſters of diſeaſes and deaths in London, are collected by old women, called in their reſpective diſtricts, pariſh ſearchers, and who conſider the ultimatum of their duty as merely to prevent private funerals, and concealed murders. The law ordains, that every perſon who dies in London is to be examined by the ſearchers previous to interment. Theſe ſearchers, upon either being ſent for to inſpect a corpſe, or upon hearing the bell toll, and inſpecting the books kept in the different churches, are apprized from whence notice has been ſent of a death, in order that a grave may be opened: the two pariſh matrons then, whoſe induſtry is ſtimulated by a ſmall fee upon each corpſe, ſet out to examine that no violence has been committed upon the dead, of which they have taken an official oath to make a true declaration, and afterwards negligently enquire from the relations the name of the diſeaſe, adding the age and ſex. Theſe records, together with the chriſtenings, in which the ſearchers have no concern, are depoſited with the reſpective Clerks of each parochial church, and by them the *Chriſtenings of the eſtabliſhed church, and the Burials in their reſpective parochial church-yards alone* are carried once every week to a general hall in the city: on the following day the weekly bill, comprehending theſe partial returns, is printed and publiſhed, and at the end of the year a general annual bill, in which all the weekly returns are conſolidated. Several thouſand annual births and burials are omitted in this mutilated regiſter.

From bills conducted upon a larger ſcale, and with more accuracy, Politicians, Phyſicians, Philoſophers, and Calculators of annuities, might derive an inexhauſtible fund of the moſt important and uſeful information. They would then demonſtrate the number of inhabitants, male and female, exiſting at every age, in any city, province, or kingdom, the number of married, unmarried, widowers, widows, maids, and batchelors, the annual average of weddings, of pregnant women, of population and of children born, the actual and comparative ratio of mortality by every diſeaſe and caſualty, and the proſpects of life and death through every ſtage of life, the diſeaſes principally fatal to a nation, the ſeaſons moſt noxious, and the diſeaſes moſt prevalent throughout every period of our annual circumvolution round the ſun, the effects of diet, drink, and medical practice, the comparative ſalubrity and inſalubrity of city, town, and country air, of different ſituations, and their effects upon different ages; we could then aſcertain with tolerable exactneſs the comparative ravages of death, the force of his frightful hoſt of pain and diſeaſes, and the inroads by which his principal aſſaults and carnage might be expected; we could then, independent of venerable opinions, form prognoſticks upon mathematical grounds. In medical books, almoſt univerſally, the extenſive deſolation of the moſt rapacious tyrants and conquerors are confounded with the unintereſting hiſtory and petty depredations of a robber. The bills of mortality are overlooked by all the great ſyſtematic writers on medicine; they leave us equally ignorant of the actual and relative havock by thoſe fiends which haunt and ravage the globe. Inſtead of fruitleſs enquiries into the primary elements, and of torturing the fluids and ſolids by chymical proceſſes, I conceive that this ſcience ſhould conſtitute a moſt material and conſpicuous part in the edifice of phyſiology, of pathology, and of the ſyſtems on the practice of medicine. It is an epitome of the general laws of nature reſpecting propagation and mortality. It is the annual return of the victims of all ages that are tranſported acroſs the Stygian lake.

CALCULATIONS of human propagation, and mortality, of relative numbers, ages, &c. derived from a large maſs of obſervations and regiſters in different parts of Europe, have been publiſhed by ſeveral eminent philoſophers and mathematicians. Graunt, ſomewhat later than the middle of the preceding or 17th century, firſt wrote on the London bills, and was followed ſoon after by Petty and Davenant. The preſent century has produced ſeveral excellent treatiſes upon the ſame ſubject. The moſt celebrated are Dr. Halley's; De. Moivre's on annuities; Suſmilch's calculations; Simpſon's ſelect exerciſes; ſome eſſays in the philoſophical tranſactions; Short's obſervations on various bills of mortality; Dr. Price's eſſay on annuities and reverſions; and Birch's collection of the London bills to 1759. In my obſervations, Medical and Political, I have contracted and arranged the births, diſeaſes, caſualties, and deaths of London,

don, during the laſt 105 *years*, into a few regular tables, and have added a commentary of conſiderable length upon each diſeaſe and caſualty. To illuſtrate the defects of the bills, I have alſo added ſeveral curious hoſpital returns. I have, if I miſtake not, there preſented an eaſy and practicable plan, and to be conducted without any additional expence, for new modelling and eſſentially improving the bills of births and mortality of London, and every other city, and of rendering thoſe records objects of the firſt moment to politicians, phyſicians, and to mankind at large.

ANOTHER ſupereminent diſcovery claims our attention and gratitude. Neither Rhazes, Avicenna, nor any of the Arabian Phyſicians, who wrote in the 9th and 10th centuries, make the leaſt mention of Inoculation. The earlieſt information received in Britain of inoculation, and its utility in ſurpriſingly diminiſhing the mortality of the Small-pox, was from Emanuel Timoni, a Greek Phyſician, in a letter to Dr. Woodward, dated at Conſtantinople, 1713. In another epiſtle from the ſame author to the Royal Society of London, (1715) he ſays, that 40 years prior to the preceding date, inoculation had been introduced into the capital of Turkey, from two of the Aſiatic provinces bordering on the Caſpian Sea, Circaſſia and Georgia, where the antiquity or beginning of the practice cannot be traced back to its origin. An account of the Circaſſian practice may be ſeen in Motraye's travels to that country in 1712. Pylarini's larini's account of inoculation at Conſtantinople, where he then reſided, was publiſhed at Venice, 1715, in which year many thouſands were inoculated in the metropolis of Turkey. The Turks themſelves, as Mahometans and fataliſts, and obſtinately attached to the dogmas inculcated in the Alcoran, which command them not to fly even from the plague, rejected inoculation, and it was adopted only amongſt the Greeks, Armenians, and Jews. In Greece, and the adjacent iſland of Candia, it had been a practice during one or two centuries earlier, and probably by means of the provincial ſoldiers of Turkey, had been carried into ſeveral of their tributary provinces in Africa.

Besides the ſecurity afforded by inocuſation, we learn that the Circaſſians and Georgians were induced to the practice by another powerful motive, avarice, in order to preſerve the beauty of their female children, and to ſell them at high prices to rich Turks and Perſians as miſtreſſes. They transferred the variolous matter by a ſmall ſcratch made in different parts of the body, previouſly dipping the point of the needle into a ripe puſtule, or into a nutſhel filled with variolous matter. Many Greek women at Conſtantinople exerciſed the function of inoculators, nearly in the ſame manner. They made four or five ſcratches in different parts of the body or extremities, over theſe punctures a plaſter was laid, and after 7 or eight days, a ſlight fever or ſickneſs enſued, ſucceeded by an eruption of puſtules, but ſeldom or never any ſecondary fever, or violent ſymptoms ſo fatal in the natural ſmall pox at the ebb of maturation, were obſerved to accompany the inoculated. They were alſo indifferent whether the variolous infection was engrafted from natural, or from artificial puſtules.

In 1717, Lady M. W. Montague, the elegant letter writer, and wife to the Engliſh Ambaſſador at Conſtantinople, had her ſon inoculated in that capital by Maitland, an Engliſh Surgeon. In 1721, Dr. Mead and Mr. Maitland made the experiment of inoculation in London upon ſeven condemned criminals, all of whom by that means obtained a pardon, and recovered. On Lady Montague's return to England in 1722, her daughter was inoculated by a ſlight inciſion on each arm, an improvement in the ſimplicity of the operation introduced by Timoni. A few months after Miſs Montague, ſome of the royal family were inoculated; and in the ſame year inoculation was carried to Boſton in North America.

Fears and ſtrong prejudices almoſt univerſally prevailed againſt a practice ſo novel. Several Phyſicians and Divines exclaimed againſt inoculation, and a variety of objections and falſhoods were ſoon invented and printed to depreciate this important diſcovery. Dr. Jurin, the foſtering patron of inoculation in London, publiſhed ſeveral detached papers in the philoſophical tranſactions, comparing the mortality of the natural, with the inoculated ſmall-pox. From a great maſs of materials,

terials, and many thouſands of ſick in different parts of England, he found that *one of five or ſix at a medium* die by the natural diſeaſe; a proportion confirmed by later and much more enlarged calculations. In Turkey, in the northern parts of Europe, and in Africa, throughout the whole extent of the Mediterranean coaſt, the ſmall-pox is ſtill more rapacious; in ſeveral inſtances it has been ſo virulent as to kill nearly one half of the infected. On the other hand, of thoſe then inoculated, 1 of 50 died; but amongſt them were included young infants, many of whom are cut off by convulſions, which was laid to inoculation, together with ſome aged perſons and valetudinarians. Beſides, a very few trials had been made of its ſucceſs; Jurin's liſt of all the inoculated in London, and other parts of England, from 1721 to 1727, amount to 764 only.

INOCULATION, from 1727, languiſhed in England and in North America until 1738, when it was again revived in both countries. In 1746, a ſmall charitable hoſpital was erected in the ſuburbs of London, for the purpoſe of inoculation. In 1723, a few Phyſicians and Patriots of France had made an unſucceſsful attempt to introduce inoculation into that kingdom; and from 1724 to 1752, all the medical writers of that nation are ſilent on inoculation: throughout that long interval it ſlept there in profound oblivion, when the Engliſh publications and enlarged experience of inoculators were revived and expoſed to view as a recommendation of the practice. Mr. P. C. Condamine, the celebrated French patron of inoculation, could collect a liſt of no more than 200 inoculated throughout all France, during the firſt four years after its introduction in 1754. Holland had adopted inoculation in 1748. The practice was introduced into Italy in 1754, and a year after into Sweden and Denmark. The ſum total of the inoculated in Sweden, during the firſt nine years, amounted only to 1200.

The different regiſters of ſucceſs and miſcarriage under inoculation, and it would be eaſy to multiply piles of ſimilar examples, authorize us at this day to draw the following concluſions. According to the immature calculations of Jurin, of thoſe inoculated, 1 of 50, and of Mead, 1 of 100 died; but by accounts of later date, collected by various practical inoculators and phyſicians, on an average 1 only of every 500 inoculated die. In ſupport of this moderate calculation, I have, in a former treatiſe, called "Obſervations Medical and Political," produced unqueſtionable vouchers and authorities. Excluſive of the immediate dreadful havock by the natural ſmall-pox, numbers who ſurvive are disfigured; in multitudes of others the diſeaſe is ſucceeded by complaints of the lungs and conſumptions, and a conſiderable number annually loſe their eye-ſight. No bad ſymptoms of this ſort follow the inoculated ſmall-pox.

Though the ſucceſs of inoculation is unparalelled, in affording ſecurity from a direful diſeaſe, and in operating almoſt as a miracle for the preſervation of mankind; yet long habits, ignorance, and ſuperſtitious prejudices obſtructed its admiſſion for a long time; it had to encounter, in every kingdom, an hoſt of opponents, and by ſlow degrees got a footing. The practice at preſent is very far from being ſo univerſally encouraged as it merits. Even in London, and other parts of England, I have in a former publication demonſtrated that inoculation is yet in its infancy.

In the preciſe mode of engrafting variolous infection, Inoculators are not agreed. The Bramins of India, and ſeveral European operators, make one ſimple inciſion or ſcratch only with a lancet, and in length about 1-4th of an inch: others make a ſlight ſcratch in each arm, above the elbow, in order to prevent a poſſibility of miſcarriage. Cotton, or threads of ſilk, impregnated with matter from a ripe puſtule, are laid on the ſcratch or wound, and over all an adheſive plaſter or bandage, which after a few hours is finally removed. Others again dip the point of a lancet, or broad needle into a ripe puſtule, and by one or two ſcratches on each arm, convey the diſeaſe, and in this way no plaſter or bandage is required. In all caſes it is unneceſſary to pierce beyond the thin external ſkin, or cuticle. I have done it to children, both awake and ſleeping, without their being ſenſible of any operation or pain. The Bramins of India uſe the preſerved matter of the preceding year, and taken from inoculated ſmall-pox only;

with

with us Inoculators generally prefer freſh matter, but taken indifferently from either natural or artificial puſtules. Some preſcribe elaborate preparation by diet, purgatives, and noſtrums previous to inſerting the infection: young children eſpecially may ſafely diſpenſe with many of thoſe ſcientific medical manœuvres, and intereſted ceremonies. Others with more ſenſe and honeſty take care merely that the ſubject to be inoculated is in health; a vegetable diet, freſh air and amuſements are the only *ſeverities* of their regimen throughout inoculation. With reſpect to the proper ſeaſon for inoculation, it is uſual to avoid the extremes of heat and cold; but when the natural diſeaſe appears in the neighbourhood, we are to diſregard the leſſer evil, and to fly to inoculation.

THE introduction of inoculation into England, and into other parts of Europe, the authors in ſupport and detraction of the practice, and the different treatment of the inoculated, may be learned from Dr. Jurin's papers, from Kirkpatricks Hiſtory of Inoculation, from Maty, Gatti, Gandoger de Foigny, "Hiſtoire de la Inoculation par Mr. de "la Condamine," and from my Obſervations Medical and Political.

AN alarm has of late years been created againſt general inoculation in London and other cities, and in printed treatiſes it is repreſented as big with danger to the public ſafety. This opinion is maintained by many foreign writers of eminence, by De Haen, Raſt, Tiſſot, and in London by Baron

Diſmdale,

Dimſdale, and by ſome of the periodical Reviewers of medical publications. They all have aſſerted, in the moſt peremptory language, "That by general inoculation in cities, at private houſes, variolous contagion is more likely from that cauſe to be diſperſed in the natural way, and therefore upon the whole, that the community at large are more likely to be injured, than benefited by the practice, and the only aſylum which they allowed in cities to all the lower and middling trades-people, is an inoculating hoſpital." Upon the determination of this ſingle propoſition, reſted the fate of inoculation. Could Baron Dimſdale, the leading champion of that party, and his literary colleagues, have ſupported their repeated publications with as much argument as they have done with zeal and obſtinacy, policy and humanity would have dictated the total ſuppreſſion of a a practice more detrimental on the whole than beneficial to the public. To this great medical and political controverſy, I devoted an entire chapter in my Obſervations Medical and Political, and after endeavouring to refute all the arguments urged by Baron Dimſdale againſt general Inoculation in cities, "at the private houſes of the lower claſs and middling trades-people," I afterwards demonſtrated, by deciſive mathematical proofs, that an inoculating hoſpital in London, however large, as now conducted, or indeed in any other practicable plan, could not poſſibly ſave 200 lives annually; that almoſt as many undergo the diſeaſe annually in the natural way, as would be neceſſary under inoculation; that was inoculation general in the early parts of life at the houſes of the inhabitants, London might ſave about 2000; Great Britain and Ireland between 20 and 30 thouſand; and Europe about 390 thouſand lives *annually*.

LET us now direct our inquiries to medicinal ſprings. In modern times, numerous fountains have been diſcovered of mineral waters endowed with different ſalutary virtues, and are now more frequently reſorted to and preſcribed in chronic infirmities. Hippocrates is ſilent on medicated ſprings, nor for ſeveral centuries after do we find them employed in the rotine of practice. At Rome, Strabo, Vitruvius, Celſus, Seneca, Pliny and Galen mention ſome medicated waters uſeful in the cure of diſeaſes. Seneca ſays that ſome ſtrengthened the nerves, cured ulcers, and were ſerviceable in diſeaſes of the lungs, and internal viſcera, and that their uſes were as various as their taſte. Diodorus Siculus mentions, that the natural hot baths of Sicily were in uſe prior to thoſe of Italy. The warm medicated waters of Germany, and of Bourbon in France, have been many ages in vogue. The hot fountains of Bath and Buxton ſeem to have been known to, and pointed out by the Romans; in the 16th century they were frequented as bathing ſprings; but their internal efficacy was little regarded or known until the end of the 17th century.

Sick perſons are frequently ſent by their phyſicians too late to medicated ſprings, merely to die at a diſtance. Numbers have been indebted to mineral waters for a reſpite from the grave, and a perfect recovery from diſeaſes which had proved impregnable to all the materials of the ſhops. Bath is the hotteſt ſpring in England, and Buxton the ſecond. The waters of Bath, drunk warm at the pump, and in moderate quantity, are celebrated in relieving weakneſs of the ſtomach and inteſtines, decayed appetite, indigeſtion, and acidities, whether originating from intemperance, ſevere ſtudy, indolence or various other cauſes: they are alſo famed in chronic fluxes, weakneſs of the digeſtive organs, or coſtiveneſs from ſimilar cauſes, and in repairing conſtitutions injured by reſidence in warm climates; and by violent fevers prevalent in ſuch regions; likewiſe in colic and bilious complaints, in old habitual and irregular gout, in cachexy, in ſeveral female maladies affecting the ſtomach and concoction, and in ſome caſes of ſterility. The waters of this ſpring, drunk and uſed as baths, and alſo pumped on the affected part, have performed diſtinguiſhed cures in paralytic diſeaſes, whether general or partial, in chronic rheumatiſms and ſciatica, in contraction, rigidity or weakneſs of the tendons at the joints, in foulneſs of the ſkin, tetters, leproſy, and ſcrophula, and as a waſh in ſome ſcrophulous opthalmies. Briſtol ſpring, in the vicinity of Bath, was diſcovered in the 17th century: it is an excellent remedy in pulmonary conſumptions, hæmorrhages, and hecticks; and it is alſo commended in hæmorrhages from the kidneys and urinary paſſages, and from the womb, and in internal ulcers. In the diabetes, or profuſe flow of urine, which is uſually accompanied with a hectic emaciation, this water is a celebrated ſpecific. It has another peculiar property, that it may be carried round the globe tranſparent and unchanged.

At Aix la Chapelle, and in France, and Italy, the warm mineral waters and natural baths, are ſucceſsfully adminiſtered in the ſame diſeaſes with the Bath ſpring. The heat of two ſtrong impregnated fountains at Aix la Chapelle is equal to 144, and 160 of Fahrenheit's thermometer, and anſwer the purpoſe either of a general, or of a partial vapour bath. Artificial vapour baths were ancient remedies, but before the preſent century, had not been erected in this iſland. In ſome particular diſeaſes they have done ſignal ſervice: it happens however unfortunately, that like Herodicus, the Greek athletic empiric, or the medical alchymiſts, the proprietors of the baths are too zealous and clamorous to puff them as univerſal panaceas in every diſeaſe. Conſult, on the other hand, the advocates for cold bathing, Floyer and Baynard, for inſtance, ſhould implicit credit be given to their panegyricks, there are few diſeaſes which are not oppugnable by immerſion in cold water. Each of our hoſpitals, not excepting even mad-houſes, ſhould be provided with a cold, a warm, and a vapour bath. The high price at which the vapour baths in London are retailed by the proprietors, render them almoſt uſeleſs to the bulk of the community.

Chalybeate waters, that is ſuch as are impregnated with iron, are deſervedly extolled in female obſtructions, chloroſis, and fluor albus, in nervous or muſcular weakneſs, relaxations, and imbecility, in bloated, indolent phlegmatic habits, and decayed tone of the ſtomach and inteſtines. Several chalybeate ſprings are interſperſed throughout this iſland. We have alſo a few celebrated Diuretic ſprings in calculous and gravelly complaints; mild Purging ſprings; Sulphureous ſprings renowned in the cure of cutaneous diſeaſes; and others tinctured with various medicated qualities.

In the 16th century, treatiſes were publiſhed on Medicinal Springs and Baths by C. Geſner, A. Baccius, J. Bauhine, and G Fallopius. Mr. Boyle, in the 17th century, ſketched the outlines of a plan for a general hiſtory of mineral waters. F. Hoffman is one of the beſt authors that I have peruſed on the German ſprings. The French Academy have admitted into their memoirs a variety of papers on the analyſis and medical virtues of different ſprings in France. On the impregnations and medicinal virtues of various Britiſh ſprings, we have Allen, Liſter, Short, Guidot, Oliver, Cheyne, Charlton, Keir, Randolph, &c. Monro and Rutty have attempted to form compendiums of the moſt celebrated medicinal ſprings in different parts of

Europe. Haller has regiſtered a large catalogue of writers on medicated fountains, and Groſſen has compiled a Bibliotheca Hydrographica. A medical work, comprehending a conciſe analyſis, and narration of the virtues of the moſt renowned medicinal ſprings in Europe in the cure of diſeaſes, would be an uſeful production; it is a field for medical induſtry and abilities to gather laurels. In analyzing the impregnations of the ſame ſpring, ſcarce two authors agree. Whoever engages in a review of thoſe publications, muſt carefully ſeparate truth from fable; he muſt ſcrupulouſly ſcrutinize the authenticity of the materials; he may venture alſo to lopp off a farrago of theoretical bombaſt, chymical traſh, trivial records, and a thouſand ſuperfluities. This then might be termed a pharmocopœia of ſome of the moſt agreeable and powerful remedies ſpontaneouſly prepared by nature for the benefit of man.

Several Chymiſts have attempted by art to imitate mineral waters. In the 17th century, Jennings and Howarth obtained a patent from Charles the IId. for making artificial chalybeate waters. Dr. Prieſtly directs how to imitate the Pyrmont, and Bergman, of Sweden, the hot waters. Whether ſuch artificial imitations poſſeſs the full medicinal powers of the natural ſpring, is not ſo well aſcertained. When Phyſicians obſerved that lemons and oranges cured the ſcurvy, they concluded, from analogy, that the ſame effect muſt be produced by other acids; but after trying vinegar, and the ſtrongeſt mineral acids diluted, they found them ineffectual, and that the natural fruit was endowed with ſome latent virtue which they could not diſcover nor counterfeit. Medicated ſprings, in like manner, ſeem impregnated with a ſubtile ſpirit which evades the Chymical torture in their reſolution of the ſeparate ingredients. Mr. Boyle was clearly of opinion, that we could not ſecurely determine *a priori* the medical effects of mineral ſprings, and that the ſureſt way of knowing them is by long and ſufficient experience of their operation upon the human body in diſeaſes.

I PROPOSE now to make a few obſervations on the modern ſyſtems of Noſology, by F. B. Sauvages, C. Linneus, R. A. Vogel, W. Cullen, and J. B. M. Sagar. Theſe writers, in imitation of the naturaliſts, and upon the ſame principles, have thought proper to arrange diſeaſes into claſſes, orders, genera, and ſpecies, with a few marks of diſcrimination to each.

ORDER and method are unqueſtionably neceſſary in all arts and ſciences. Without ſome arrangement in the profuſe ſtock of materials, and obſervations required in the Medical profeſſion, a prodigious confuſion would enſue. Such a chaos might be compared to a large library of books piled together in diſorder, to a Dictionary without any alphabetical regularity, or to a great lumber-room filled with heaps of different materials: we ſhould be obliged to ſearch a long time for what we wanted, and could make very ſlow progreſs in ſtudy. The ſcanty learning of moſt rude tribes may be eaſily retained in the memory without any arrangement; but in literary and poliſhed nations the objects of ſcience and arts are ſo widely multiplied and diverſified, that the confined memory of man, and ſpan of human exiſtence muſt be contented with a part. On theſe accounts arts and ſciences, and amongſt the number medicine, are ſeparated into diſtinct groups, branching out into legions of diviſions and ſubdiviſions. It is truly melancholy, however, to think, that *diſeaſes alone* ſhould be ſo numerous as to have employed the talents and induſtry of ſeveral ingenious Phyſicians, principally in adjuſting their claſſification and arrangement; and, that like the multifarious objects of Botany and Natural hiſtory, volumes ſhould alſo be filled with a dreary vocabulary of diſeaſes.

THANKS to God, diſeaſes are not ſo numerous as the vegetable tribe; ſurrounded with ſo many enemies, mankind would require as many Phyſicians as Cooks: if this was true, a material change and revolution ſhould alſo take place in the ſtudy of Medicine; the important doctrine of the ſigns and diagnoſtics of diſeaſes would demand infinitely more attention.

THE taſte for ſubtilizing diſeaſes into a variety of ſpecies began with the revival of literature in Europe, when Ariſtotle was ſtill worſhipped with profound reverence, and when men laboured with ſilly pains to ſubtilize away ſenſe in terms and diſtinctions, and in the jargon of falſe logic. Braſſavolus, in a large volume, written 200 years ago, upon the venereal diſeaſe, reckons up 234 different ſpecies and complications. G. Harvey in the ſame abſurd manner ſplit the Scurvy into a multitude of ſpecies. Taylor, the noted Oculiſt and Empiric, made 245 diſtinct ſpecies of Diſeaſes incident to the Eyes. De Haen, in ridicule, ſays that he would undertake to make 250 ſpecies of the Epilepſy; and an ingenious man might contrive to make an equal number of ſpecies of Maniacs.

We can marſhal a certain number of diſeaſes into one group, claſs, or order; they have conſiderable reſemblance, and natural affinity in either their cauſes, ſymptoms, prognoſtics, method of cure, or other circumſtances, and coaleſce together. Such, for example, are Intermittent and Remittent Fevers, internal topical Inflammations, Dropſies, diſeaſes peculiar to Women, and to Infants; ſome ſurgical diſeaſes, ſuch as Wounds, Fractures, Luxations, Ulcers, &c. Some general principles apply to an intire claſs and order. There are on the other hand many other diſeaſes where no general and conciſe definition can be deviſed to comprehend them in an aggregate cluſter: it is difficult to aſſign them any fixed ſtation, they are ſo detached and unconnected with each other, and whether they are claſſed or not ſeems nearly immaterial, provided the diagnoſtic ſymptoms or portrait of each are drawn conciſe and correct. From a diſtant ſimilarity in one or two ſymptoms, from a concordance in the ſeat or locality, from theoretical notions reſpecting the cauſes, and from a variety of other circumſtances, diſeaſes might with great facility be parcelled into monſtrous combinations and aſſociations. Noſologiſts have accordingly varied the chords and diſcords, and rung the changes " ad libitum."

Classification is ſolely intended to aſſiſt the memory, to enable us to attain knowledge with more eaſe and diſpatch; ſo that by a natural order, and a few eſſential marks, not too numerous to be retained in the memory, every diſeaſe may be readily found, and unerringly diſcriminated from all others. This ſhould be the criterion of Noſological ſyſtems. Could diſeaſes be known with certainty, by a ſingle ſymptom, it would be a happy circumſtance, and greatly leſſon the labour and expence of medical ſtudies. This I apprehend is one of the rocks upon which ſeveral modern Noſologiſts have ſplit; by curtailing eſſential ſymptoms with violence, they have rendered the character of each diſeaſe, or in other words, the Genus, faint and obſcure, and ſtript them into naked ſkeletons, where the features are no longer diſtinct and viſible. Many, eſpecially of the modern authors, had diſtracted their readers with a tedious enumeration of ſigns, numbers of which were accidental and not conſtant. A tree may be correctly deſcribed without enumerating

rating all its branches, and leaves, of the head, without numbering all the hairs which grow upon it. In ſome febrile, and nervous diſeaſes, almoſt every function of the body is diſordered, but it is unneceſſary to recapitulate the whole train, becauſe in ſuch a thicket we often loſe ſight of the primary and diagnoſtic ſymptoms. Modern Noſologiſts have leaped into the oppoſite extreme, and have frequently degenerated into mere nomenclators.

If on the one hand the diagnoſtics of Diſeaſes, or to ſpeak technically, of the Genus, are too conciſe and maimed in Noſologies, ſome of them in their arrangement into claſſes, orders, genera, and ſpecies are too prolix; the memory is taxed and teazed, and becomes fatigued with futile diſtinctions. Like many good things, the rigid pedantic attachment to method is carried to exceſs. Noſologiſts are often outrageouſly methodical, and overcharged with paradoxical refinements. They proceed on ſome occaſions like perſons in a mechanical profeſſion, attempting to improve an ingenious piece of machinery, by adding double or treble the number of wheels: they ſometimes cut a ſingle Diſeaſe into a number of pieces, or ſpecies, and confuſe the reader to ſearch for the ſcattered fragments amongſt a number of heterogeneous orders. Their claſſes and orders, like thoſe of the ſtrictum and laxum of the ancient methodics, are frequently forced and artificial, and Diſeaſes totally diſcordant in their nature, cauſes, and method of cure fettered together. Even in the general character of ſeveral of their claſſes there are fundamental errors.

ANOTHER defect in moſt of the Noſologiſts is, that they have not diſcriminated with marked attention the Diſeaſes which occur frequently, and which deſtroy multitudes of mankind. It is abſurd to beſtow equal pains and care upon the diagnoſtics of Corns, Warts, and ſuch meagre trifles, as upon Remittent and Malignant Fevers, Small Pox, Conſumptions, &c. Diſeaſes which are liable to be miſtaken for others ſhould alſo be more correctly deſcribed; and there are other dangerous Diſeaſes which ſhould be detected in embryo, and cruſhed in the bud. Boerhaave, Hoffman, and moſt of the great modern ſyſtematic writers, have allotted a ſeparate claſs to the diſeaſes of Women, and another to thoſe of Infants. Moſt of the Noſologiſts, however, have deſerted the order of nature, and have left the numerous train and ſeries of complaints peculiar to the female ſex, and to infants, ſtifled and undiſtinguiſhed amongſt the crowd: placed in two claſſes, upon the fore ground of the picture, they would appear more diſtinct and viſible. It would, perhaps, alſo be more uſeful to mark, in chronological order and gradation, the ſynonymous or different names, by which authors, that is, thoſe of eminence, have characterized the ſame diſeaſe.

The technical terms of ſcience, one of the greateſt nuiſances, which defiles and darkens every branch of Phyſick, are unneceſſarily increaſed by the Noſologiſts. Sauvages has an Order called Hallucinationes and Moroſitates, Vogel Diſeaſes called Alotriophagia, Sparganoſis, Hemantoſis, Acatopoſis and Carebaria; the etymology and meaning of which the old Greeks, were they to return to the earth, would be puzzled to decypher. Should the career of Noſology, and licentious affectation of new terms, go on for a century, we ſhall it is to be feared, have a ſynod of Noſological Methodiſts, a new language and medical orthography, and all the old books will be rendered ſcarce intelligible.

Grammarians have thought, that they could not more effectually and ſpeedily inſtruct their readers in the principles of grammar, and in the rules for writing the language with perſpicuity, than by pointing out examples of faults committed by eminent claſſical writers. This I truſt will plead my apology for the few preceding comments on thoſe illuſtrious Noſologiſts. The nature of this compendium will not admit of a more pointed and ſpecific criticiſm in detail. The latter would be attended with infinitely leſs difficulty, than the general ſurvey and outline in miniature of an intire claſs or community of writers.

The following diſtinguiſhed authors of the 18th century are arranged into a few cluſters from ſome ſimilarity in the ſubject of their writings, and one cluſter is miſcellaneous.

A. Pitcairn Elementa Medicinæ. J. Allen's Synopſis Univerſæ Medicinæ practicæ. Juncker's conſpectus Therapiæ generalis. F. Home's Principia Medicinæ. The London Practice of Phyſick. Elements of the Practice of Phyſick, by G. Fordyce; by W. Cullen; and by J. Gregory. Vogel's Prelectiones Medicæ. G. W. Wedel Pathologia. H. D. Gaubii Syſtema ſeu Compendium Pathologiæ.

F. Torti de Morbis Epidemicis & febribus. R. Manningham on the Febricula. J. Huxham on the Pleuriſy, Peripneumony, Nervous and malignant Fevers, Small Pox, and Putrid Sore Throat. J. Fothergill on the Putrid Sore Throat. Helvetius de Variolis. Hillary on the Small Pox: ditto on the Diſeaſes of Barbadoes: ditto on the Weather and Diſeaſes. Rutty's hiſtory of the Weather. G. Cleghorn on the Epidemical Diſeaſes of Minorca. J. Rogers and M. O'Connel on Epidemical Fevers at Cork. J. Sims on Epidemical Diſeaſes. Clarke on the Diſeaſes in long Voyages to the Eaſt Indies.

G. CHEYNE on the Gout, Hypochondriacal and Hyſterical diſeaſes. B. Mandeville on the Hyſterical and Hypochondrical diſeaſe. On the Gout, G Muſgrave, W. Cadogan, Williams, Grant. N. Robinſon on the Spleen and Vapours. R. Whytt on Nervous and Hypochondriacal diſeaſes. P. Sachinus de eruditorum morbis. Tiſſot on the Diſeaſes of

People of Faſhion and of Literati. G. C. Schelhammer de humani animi affectibus; & inde expectandis in corpore bonis maliſque. Battie on Madneſs. Senac on the Heart, and its Diſeaſes.

J. Floyer on the Aſthma. J. Miller on the Aſthma and Chin cough. R. Blackmore on Conſumptions. R. Ruſſel de Tabe glandulari, and utility of Sea Water in the Scrophula.

On the diſeaſes and medicinal treatment of Infants, Brouyet; B. Meibomius; G. Armſtrong; W. Moſs.

De Vermibus corporis humani; Le Clerc; S. Coulet; Andry; Van Doevern.

On the Venereal Diſeaſe we have many writers, but few material therapeutic improvements in the 17th century. In the preſent century J. Aſtruc, in two quarto volumes, collected the names of all preceding authors on this diſeaſe, and almoſt every eſſential practical obſervation on the ſymptoms and cure. It is now cured without thoſe violent ſhocks given to the conſtitution, by profuſe ſalivation and ſweating, which formerly undermined the health, and proved fatal to numbers of the indiſcreet votaries of Venus. Unleſs the caſe is extremely virulent, we ſeldom think it neceſſary to puſh mercury to the exceſs of exciting a ſalivation. Our general remedies continue to be either Mercurial Unction, or crude Mercurial pills, Calomel pills, or a ſolution of corroſive ſublimate, with decoctions of Guiacum and Sarſaparilla. I will not ſurfeit the reader with a long catalogue of writers on the Venereal Diſeaſe: it is one of the hot beds of Empiricks and of empirical treatiſes: the majority of them are like ſummer inſects, that buz for a day, and are unworthy of record.

J. La Bruyer wrote a treatiſe on the uncertainty of the ſigns of death. On the means of recovering drowned perſons to life, ſmall pamphlets have been publiſhed by the Humane Societies of Holland and of London, and one by W. Cullen. The falſe notions of the Lungs and Stomach, in ſuch accidents, being filled with water is exploded, together with the rude treatment and ſuſpenſion of the head. By means of heat, inceſſant friction by aſſiſtants, blowing air into the lungs, and heated tobacco fumes into the Anus, a conſiderable number who had not lain too long under water have been reſcued from the grave.

MISCELLANEOUS Treatiſes. De Haen's ratio Medendi. C. Letſom's Medical Memoirs. D. Monro on the Dropſy. Young on the effects and uſe of Opium. Nihel's predictions from the Pulſe. Percival's Eſſays. Aitkin's Thoughts on Hoſpitals. N. Robinſon on the Stone and Gravel. G. Baker on the Colic and Poiſon of Lead. Bianchi Hiſtoria hepatis. Mudge's deſcription of an Inhaler, to convey medicated ſteams into the Mouth and Lungs.

DE Juriſprudentia Medica, & Chirurgica. F. Fidelis, P. Amman; M. Albertus; J. Bonnius.

G. Fuller on the utility of Exerciſe. G. Cheyne on Health and long Life, and on the regulations of the Nonnaturals, and choice of diet. J. Arbuthnot on Diet and Aliments. N. Andry Traité des Alimens. J. Armſtrong's Art of preſerving Health. Barry on Wines. On Domeſtic Medicine, Tiſſot and D. Buchan.

J. Furſtinavius de deſideratis Medicis. Machievelium Medicum. J. Gregory's Duty and Office of a Phyſician.

Diseases of the Brute Creation. On Diſeaſes of Horſes, Gibſon and Bartlet. On Diſeaſes of Sheep and Black Cattle, various authors are collected by Haller, and in the Giournal di Literati of Italy.

It may poſſibly be attributed to either ignorance or negligence, that the pathological ſyſtem of Gaubius, a text book in many univerſities, is ſlurred over without any comment. I have long conſidered the ſyſtems of pathology, and even that of my old learned Dutch maſter, Gaubius, as imperfect, both in the general outline and compoſition. They are in general too refined for the active buſineſs of medicine; and are not yet, as I conceive, ſufficiently diſentangled from the reveries of the Galeniſts, Chymiſts, and Mechanicks.

The pathology of diſeaſes, whether originating from external or internal cauſes, is certainly much more clearly elucidated, and better underſtood by the moderns; but the " Methodus Medendi", has not kept pace with thoſe improvements. Credit has been given to a thread-bare ſaying, that if you tell the Phyſician the diſeaſe, he can ſoon find the remedy. In ſome caſes this is true, in others it is falſe. One author purſues the rout of others, and directs us to perfect the hiſtory of diſeaſes, make obſervations and multiply ſymptoms is the hue and cry. We have very good hiſtories of Gout, Stone, Conſumptions, Aſthma, Plague, Epilepſy, Apoplexy, Palſy, Madneſs, Head-ach, Scrophula, Dropſy, Cancer, Gangrene, Mortification, &c. To render our reſiſtance againſt diſeaſes and death more ſucceſsful, our principal defect *at this day* is in remedies, remedies, remedies. In the more effectual means of curing the above diſeaſes, we have not greatly outſtripped the ancients; and this will account for the conciſeneſs of my comments, or rather ſilence upon that part of the modern practice.

OBSTETRICKS.

AMONGST the ancient writers of Greece, Rome, and Arabia, we have no publication that can be called a regular or compleat ſyſtem of Obſtetricks, and much leſs of the diſeaſes of Infants. Hippocrates is abundantly diffuſe on female diſeaſes; but on the Obſtetric art his precepts and thoſe of Ætius had not grown beyond the embryo of this ſcience.

Ambroſe Parey, a French ſurgeon, of the 16th century, is one of the firſt amongſt the moderns who began to reform and improve Obſtetricks: indeed moſt of the ſucceeding eminent writers on this ſubject will be found to be either French or Britiſh. At Rome, ſays Haller, in the year 1627, there was but one man who practiſed Midwifery. In Britain we could at preſent muſter a numerous army of this neuter gender.

The principal ſcope of modern Obſtetric ſyſtems is to deſcribe the ſtructure of the pelvis, or bony cavity, through which the infant muſt deſcend previous to delivery; the ſtructure of the female organs of generation; the ſigns of pregnancy; the proceſs of generation, of the nutrition, gradual enlargement and ſize of the fetus; the proceſs of parturition, whether natural or preternatural, the cauſes of tedious and difficult labours, and the neceſſary aſſiſtance; the diſeaſes peculiar to women, before pregnancy, during pregnancy, and after delivery, and the diſeaſes of infants, and cure. In fact the whole materials of Obſtetricks conſiſt of very little more than parings from Anatomy, and the practical part of Medicine. Obſtetricks now very properly form a regular courſe of Academic lectures at many univerſities; where the proceſs of parturition, in every poſſible variation, is previouſly demonſtrated and explained on machines reſembling the mother and fetus. The moſt general cauſes of tedious labours are few in number, and depend upon either the fetus or the mother. They are to be attributed either to a preternatural poſition of the fetus, to its large ſize, a dropſy of its head, or to its being dead; if on the ſide of the mother, to a narrow or deformed pelvis, to faults of the uterus and vagina, to her debility, &c. The dangerous diſeaſes which ſometimes accompany and ſucceed parturition are alſo few in number: ſuch are, profuſe Floodings, Milk fevers, Inflammation of the womb and peritoneum, ſuppreſſion of the milk, and depoſition of it on ſome vital organ, ſudden and premature ſuppreſſion of the Lochial Flux, Miliary Fever, and ſometimes, but very rarely, malignant infectious Fevers.

The eminent writers of the 17th century on Obſtetricks are, C. Viardel; F. Mauriceau; Chamberlayne; Chapman and Giffard. Mauriceau of Paris, ſomewhat later than the middle of that century, publiſhed two quarto volumes, which embrace the whole Obſtetrick art. Chamberlayne of London, had invented a new kind of Forceps, which was kept for ſome time as a ſecret in his family, but were publickly deſcribed and delineated by Chapman and Giffard. In the natural preſentation of the infant's head foremoſt, the labour is ſometimes too tedious, nature is unable to propel the infant, and the mother's ſtrength is exhauſted; in this emergency the hands alone cannot often give ſufficient aſſiſtance; the fillets of the ancients were inconvenient, difficultly applied, and frequently ineffectual; Forceps therefore have been invented, and have undergone ſucceſſive improvements, the uſe of which are to graſp the infant's head, and in this way to extract it alive without any injury.

In the 18th century, treatiſes and ſyſtems on Obſtetricks have been publiſhed by H. Deventer, G. La Motte, and Levret; an abſtract or obſtetrick compendium by R. Manningham; an incomparable and compleat ſyſtem by W. Smellie, who alſo made ſome additional improvements to the Forceps: a ſyſtematic compendium has been lately publiſhed by J. Foſter; another by A. Hamilton, diveſted of technical terms, ſo as to be underſtood by the female ſex. J. Leake has written on the diſeaſes of pregnant women, and thoſe which ſucceed delivery. Aſtruc, formerly mentioned, wrote likewiſe a ſeparate treatiſe de Morbis Mulierum.

Cutting through the Abdominal Muſcles into the womb of a pregnant woman, who cannot, even by the ſciſſars and crotchet, be delivered of her child, is called the Cæſarean operation. The ancients never undertook this operation, but immediately after the mother had expired in labour, in order, if poſſible, to ſave the infant's life. When the mother is ſo exceedingly deformed and ricketty, and the paſſage, through which the fetus muſt deſcend, is nearly cloſed up by projecting bones, ſome modern ſurgeons and Accocheurs have ventured upon this terrible operation, in order to preſerve both the mother and infant. In ſuch forlorn extremity another experiment has been lately attempted and recommended, which is, to divide the pelvis with a knife, and to ſever the bones at the lower anterior juncture of the belly. I ſhall not utter one ſyllable in commendation of thoſe frightful operations: fortunately, they are phœnomenons that we ſeldom or ever ſee, but read of like an earthquake. In a few rare caſes, perhaps, ſome miſerable lives have been prolonged in wretched exiſtence, by ſuch ſhocking butchery: it is however to be dreaded, that the conſequences may have turned out to the general diſadvantage; that they contribute to blunt ſenſibility, to rouſe a bold and barbarous emulation; and in the hands of ignorant and raſh men, have been dangerous precedents. Several mothers and infants it is to be feared have fallen victims to unneceſſary force and inſtruments; to either the ignorance or precipitate oſtentation of male accocheurs, impatient to diſplay their own dexterity independent of Nature's efforts.

The laſt obſervation which I ſhall make on the ſubject of obſtetricks, is to expreſs my ardent wiſh, that ſchools may be erected in a few of the principal cities throughout every kingdom of Europe, for the inſtruction of female practitioners in midwifery; in one year they might be taught all the rudiments of the profeſſion, and afterwards ſhould be licenſed to practiſe it. Nature unqueſtionably over the globe is the principal operator in parturition; but Nature not unfrequently is erroneous, and requires aſſiſtance, and is often diſturbed by unſkilful interruption. To imagine, that obſtetricks can be learned by inſpiration, or by the untutored genius and experience of a ſingle individual, when every clumſey trade requires an apprenticeſhip of years, argues the extreme of abſurdity and ignorance. This defect in national police may with great juſtice be ſet down as one check on population.

SURGERY.

SURGERY, in the ſtrict limitation of the art, is principally confined to wounds, fractures, luxations, tumours, ulcers, and to the different manual operations, inſtruments and bandages. Theſe are the themes of general Syſtems of Surgery. On this ſcience and art amongſt the ancient ſurviving writers, Hippocrates, Celſus, Galen, P. Ægineta and Albucaſis, alone poſſeſs any intrinſic excellence.

It is within the laſt three centuries that we have any original improvement in ſurgery, from the era of the Arabians; nor do I know of any eminent Britiſh Surgical writers, until within the laſt 130 years. "In Germany," ſays Heiſter, "all the different "Surgical operations, at the beginning, even of "the 18th century were left to Empiricks; the "reſt were contented to cure a wound, open a "vein or an abſceſs, return a fractured or lux-"ated bone, but they ſeldom or never ventured "to perform any of the difficult operations: he "alſo ſpeaks of their groſs ignorance of the "Latin language."

The firſt Surgical work of the 16th century, entitled to any preeminence or criticiſm, is that of J. Carpus; but in the effulgence of later writers, his light is ſcarce perceptible. F. ab Aquapendente, an Italian, publiſhed a ſyſtem of Surgery, containing a deſcription of the various diſeaſes, accidents and operations. Boerhaave pays this Author the following compliment: "ille ſuperavit "omnes, & nemo illi hanc diſputat gloriam; om-"nibus potius quam hocce carere poſſumus." About the ſame period, A. Parey, a Frenchman, made ſeveral important additions to Surgery, particularly in his collection of caſes of wounds, fractures, and other accidents which occur during war. The ancients, who were ignorant of gunpowder and fire-arms, are defective in this part of military ſurgery. Parey pretends to have firſt invented the method of tying, with a needle and ſtrong ſilk thread waxed, the extremities of large arteries, after the amputation of a member. The ligature of the blood-veſſels is however merely a revival of the ancient practice, which had fallen into diſuſe; throughout the dark ages, the hot iron, cauteries, and ſtrong aſtringents were ſubſtituted in its place. B. Maggius, and L. Botallus wrote on the cure of gun-ſhot wounds. J. A. Cruce wrote a ſyſtem of ſurgery.

In the 17th century, Surgery was enriched with ſeveral ſyſtems, and with detached or miſcellaneous obſervations. The principal Authors are, M. A Severinus, V. Vidius, R. Wiſeman, Le Clerc, J. Scultetus, J. Mangetus, C. Magatus, Spigellius, F. Hildanus, T. Bartholin, P. de Marchett.

The 18th century opens with ſeveral eminent Surgical writers and improvements. In the operation of Lithotomy, as deſcribed by Celſus, the Rectum, or lower gut, and often the ſeminal ducts were wounded, fiſtulas enſued, or the power of generation was annihilated. The moderns therefore invented three methods different from that of Celſus. One method, and the earlieſt, was to introduce a catheter into the urethra and bladder, and upon that to make a direct inciſion through the urethra, into the bladder. J. de Romanis, an Italian, in the 16th century, was the original inventor of this operation, a deſcription of which was publiſhed by his pupil, Marianus. Another method, much later invented, was to diſtend the bladder as large as poſſible with urine, and when thus enlarged and elevated, to open into it, through the Abdominal muſcles, immediately above the Os Pubis. Theſe were called the high and low operations; Celſus's, the Apparatus Minor. A French Prieſt, called Frere Jacques, introduced another improvement, ſomewhat different from the modern low operation, or Apparatus Major. Jacques's inciſion was directed obliquely, and to one ſide of the urethra, avoiding, as much as poſſible, to open any conſiderable extent of the urinary canal. Inconveniences ſtill attended theſe various experiments in Lithotomy. Jacques was a bold raſh man, and ignorant of anatomy; of 60, cut by him for the ſtone, 25 died ſoon after; others ſurvived, but under an incontinence of urine and fiſtulas, and only 13 were perfectly cured. The Prieſt's operation and ſucceſs is deſcribed by J. Merey. A grooved catheter was invented to conduct the inciſion knife; another Surgeon added the cutting Gorget; and, with theſe improvements, Jacques's lateral operation is now conſidered as one of the moſt ſafe and ſucceſsful. Douglas, Cheſelden, and afterwards Le Dran, took uncommon pains to explain and to improve this operation. J. Denys alſo wrote well on the Stone and Lithotomy.

J. Petit, of Paris, wrote on diſeaſes of the bones, fractures, diſlocations and caries. Boerhaave ſays, "Tractatus hic nunquam ſibi parem habuit." Petit invented the ſcrewed Tourniquet, which can be braced or relaxed at pleaſure, and, in the hurry of battles, is extremely uſeful to compreſs the large arteries, and to ſtop the hemorrhage. Tourniquets were not uſed until towards the end of the 17th century. The ancients, previous to amputation, only made a tight ligature round the member, or attempted to graſp and compreſs the arteries with the hand and fingers; from theſe defects, amongſt them the amputation of any large member was thought tremenduous, and was too frequently fatal. Of late years, the Agaric, growing upon old oak-trees, has been extolled as a powerful ſtyptic in hemorrhages from large Veſſels.

A COMPLETE deſcription of the different Surgical accidents and diſeaſes, and of the principal Surgical operations; as executed from the beginning of the 18th century to the preſent time, with deſcriptions and plates of the inſtruments and bandages, will be ſeen in thoſe celebrated writers, French, German, and Engliſh, P. Dionis, and De la Faye, J. Garengeot, H. F. le Dran, L. Heiſter, and S. Sharp. Heiſter's Syſtem, conſiſts of two quarto volumes, and is prefaced with a large catalogue of writers. To Sharp's Compendium of the Surgical Operations, is added a volume, called a Critical Enquiry into the Modern Practice of Surgery. To theſe may be added, Saviard's Surgical Obſervations; J. Z. Platner's Surgical Inſtitutions. On Gun-ſhot wounds, and on Fractures, Ranby and Bromfield merit peruſal. Splints of a new conſtruction, to retain fractured bones in a ſteady poſition until a callus is formed, were invented by Sharp, and improved by Pott. They are made of glewed paſte-board, ſufficiently ſtiff, yet flexible by heat; for a fractured member they are two in number; one of them is covered with longitudinal rows of ſmall braſs buttons, lateral ſtraps of leather are fixed to the other, and ſurround the leg; by theſe the Splints can be eaſily braced and ſlackened to the minuteſt degree, according to the feelings of the patient, without in the leaſt diſturbing the fractured member; the apparatus can be ſpeedily applied, and in fractures of the lower extremities, which are moſt frequent, the limb is not kept, as formerly, in the ſtretched poſition, with the weight reſting upon the heel; on the contrary, the leg is laid on its outſide upon one of the Splints, properly lined with flannel, and the knee more or leſs bent, “ ad “ libitum.” When the leg lay ſtretched out in a ſtrait line, in a bolſtered cradle or caſe, the uneaſineſs and pain at the knee and heel became ſo intolerable, that, in ſpite of every precaution and care, continual efforts were made to turn it to one ſide; convulſive motions likewiſe, ſo frequent in fractured members, eſpecially in the tenſe poſition of the muſcles, operated with much more force and ſeverity, and deformity was more liable to enſue. Gouch, with meritorious ingenuity, has invented and publiſhed a deſcription of ſeveral machines, to ſecure fractured bones in a fixed ſtation. As ſuch accidents occur ſo frequently in life, and above all during war, every invention of this ſort, and the Author, is entitled to public thanks. There is infinitely more ſkill and addreds required to ſave a fractured member, than to cut it off. I ſhould be glad to ſee more books publiſhed, and ingenious mechaniſm exerted to ſave legs and arms, than on new modes of cutting them off. Knives and ſaws are dreadful alternatives, and, if I miſtake not, we have already an exuberant ſtock of treatiſes on extirpation.

Numbers had dragged through a great part of life, and many had died in excruciating agony, from obſtructions of the urethra and fiſtulas, the conſequence of venereal gleets, and other cauſes. To remedy ſuch complaints, we find Bougies of different conſtructions and materials, recommended by the moderns, and deſcribed with more or leſs accuracy in moſt of the Surgical Syſtems. In the preſent century, Daran and Goulard have written diſſertations expreſsly upon this ſubject. Goulard's Treatiſe on the Preparations of Lead, and its utility in external inflammations, ſprains, contuſions, and a variety of complaints, is alſo well entitled to peruſal.

In preventing the protruſion of Inguinal Ruptures, the modern Steel bandages, called Truſſes, are more effectual than the ancient. The nature of the Hernia Congenita, or inguinal rupture of infants, was obſcure before the publications of Haller, Hunter, and Pott. The laſt Author has written excellent Treatiſes on Ruptures, and on the Hydrocele.

On diſeaſes of the Eyes, and Surgical operations on thoſe organs, the moſt celebrated treatiſes are written by Maitre Jean, C. St. Yves, D. Mauchard, and Taylor. Daviel, a modern French Surgeon, rejected the operation of depreſſing the Cryſtalline Lens with a needle to the bottom of the Orbit, in couching of Cataracts; he made an inciſion through the external coat of the eye, and extracted this humour intire. In the former mode, the Lens frequently aſcended, and again interrupted the rays of Light.

On the Teeth, their diſeaſes, the dentiſt operations and the dentition of infants, we have two excellent treatiſes, one in French, the other in Engliſh, written by P. Fauchard, and by J. Hunter. I do not meet amongſt the ancients with any mention of artificial teeth. Hippocrates and Celſus only direct the immediate reinſtating into their ſockets ſound teeth, ſuddenly looſened from the jaw. With us, artificial teeth are commonly made from the hard tuſk of a ſea-horſe. Another modern invention, in which, unfortunately, the advantages and diſadvantages are balanced, is that of tranſplanting ſound teeth of ſimilar ſhape and ſize, from one head, and fixing them inſtantaneouſly into the freſh ſockets of another perſon's jaws; there they are tied to the neighbouring teeth by a waxed ſilk thread, and in a few weeks are firmly graſped and ſecured by the gums.

Through the writings of almoſt all the eminent *anatomiſts*, mentioned in a preceding chapter, there are a variety of miſcellaneous Surgical obſervations. To recapitulate their names in detail would be ſuperfluous.

The great ſuperiority of the moderns above the ancients in the knowledge of Anatomy; and the ſuperiority likewiſe in the conſtruction and workmanſhip of their inſtruments, neceſſarily render all their operations much more ſafe and proſperous. This, therefore, finiſhes an epitome of the principal modern Surgical improvements and Authors.

Authors by Miſtake omitted in the preceding Review of the Moderns.

Anatomy and Phyſiology; in the 17th century, A. Spigellii de humani corporis fabrica cum tabulis. In the 18th century, Compendiums of Anatomy, by Heiſter and Sabbatier.

Chymiſtry; J. M. Hoffmanni fundamenta Chymiæ, &c.

Botany; In the 16th century, H. Tragi, Herbarium Germanicum. In the 17th century, the Hortus Indicus Malabarenſis.

Materia Medica and Pharmacy; In the 16th century, J. B. Montanus; an interpreter of Galen. In the 17th century, C. Hoffmanni de Medicamentis officinalibus. S Pauli, de ſimplicium medicamentorum facultatibus.

Therapeuticks; In the 16th century, J. J. Monados, de cutaneis morbis. In the 17th century, F. Joel, compendium artis medicæ. J. Langii, Epiſtolæ Medicinales. C. Amman methodus qua qui ſurdus natus eſt loqui diſcere poteſt. T. Fienus, de ſignis morborum.

HAVING now nearly concluded the hiſtory and vocabulary of Medical and Surgical authors, I ſhall cloſe the train with thoſe diſtinguiſhed writers who have preceded me upon the ſame ſubject, and in ſome of whom there is a more luxuriant catalogue of names and writers, eſpecially on Chymiſtry, Phyſicks, Botany, Natural Hiſtory, Medical Theory, and Biography. The Artis Medicæ Principes, by H. Stephanus, in the 16th century, is merely a collection of all the celebrated ancient Greek and Latin Medical authors after Hippocrates and Galen. Near the end of the 17th century, were publiſhed H. Conringii Introductio in Univerſam Medicinam, ſeu de dirigendo ſtudio medico, cum additamentis poſtea G. Schelhammeri. Z. Luſitanus, de Medicorum principum hiſtoria. J. T. Mangetus Bibliotheca Medico Practica. V. Linden et Merklin de Scriptis Medicis. In the 18th century, C. Barcheuſen de Medicinæ origine & progreſſu, dogmata, hypotheſes, Sectæ. A.O. Goelicke Hiſtoria Medicinæ & Chirurgiæ. G. Schulzii Hiſtoria Medicinæ Antiquæ, ad annum 535 urbis Romæ. J. Le Clerc Hiſtoire de la Medicine ad annum 1500. J. Friend Hiſtoria Medicinæ a Galeni tempore ad annum 1500. H. Boerhaavii Methodus diſcendi Artem Medicam. A Halleri Boerhaavii Methodus diſcendi artem Medicam. C. G. Keiſtneri Bibliotheca Medica.

To explain the technical terms of Medicine and Surgery, and its collateral branches, a variety of large Lexicons have been written. In the 17th century, J. D. Gorrhæi definitiones Medicæ Grecæ. Caſtelli Lexicon Medicum Græco Latinum, cum additamentis Bruneri. In the 18th century, S. Blancard Lexicon Medicum Græco Latinum, cum additamentis G. Schultz: and alſo Quincy, James and Motherby's Medicinal Dictionaries. We cannot, however, but lament the rank exuberance of profeſſional barbariſms which disfigures the majority of Medical and Surgical authors, and which neceſſarily ſecludes all ſtrangers from any commerce or inſtruction. To them it appears like the myſtical jargon of heraldry, to underſtand which a dictionary muſt be conſulted ſtep by ſtep.

Of the THEORY *of* MEDICINE.

IT is juſtly obſerved, that ignorant and illiterate men have ſimply perceived effects; the buſineſs of learned men is alſo to attempt the inveſtigation of cauſes. Mankind are all naturally curious to inquire into cauſes, but this inquiſitive humour may be ſtrained beyond the narrow bounds of our faculties. Mr. Locke, an incomparable judge of the extent and limits of the human underſtanding, remarks, "that we are deſtitute of ſenſes acute "enough to diſtinguiſh the minute conſtituent

" parts of bodies, and that we have no ideas " whatever, but by the effects, in what mecha-" nical manner opium produces ſleep, or jalap " purges: our reaſon and ſenſes carry us very " little beyond matter of fact, and we have ex-" periment alone to depend upon. We are ig-" norant why aqua fortis diſſolves ſilver, and " aqua regia gold; the cauſes of magnetiſm are " unknown; the ſmall corpuſcles of matter, " though active, are concealed from us." Who can explain in what mechanical manner a ſmall particle of variolous poiſon excites fever and ſmall-pox, or the bite of a mad animal hydrophobia and madneſs? We know that effluvia from moraſſes often excite intermittent and remittent fevers, impure embraces the venereal diſeaſe; that Peruvian bark cures the firſt, and mercury the latter; but at the ſame time we are ignorant of the mechanical operation of theſe cauſes, and of theſe medicines upon the elementary parts of our fluids and ſolids. It is by experience alone we know arſenic to be a poiſon. The only true anſwer we can give to all ſuch ſubtile queſtions is, that of the Medical candidate mentioned by Moliere at an examination for a doctoral cap; "Cur opium facit dormire," interrogates the profeſſor; Reſpondet candidatus; "Quia habet vim dormitivam."

YOUNG ſtudents are too generally miſled and amuſed by ſyſtems of turgid ſophiſtry. More enlarged information, reflection in the cloſet, and experience, determine men, who ſeek for truth, to lay aſide thoſe prejudices of youth. They find themſelves in a ſituation ſomewhat ſimilar to the traveller, who in a dark night has been led aſtray by an "Ignis fatuus," but on the dawn of light perceives he has wandered aſtray: they reſolve to unlearn and caſt away a great part of that ſpecious nonſenſe garniſhed with the name of theory, and to conſider thoſe oracles, whether writers or lecturers, by whom they had been miſled, either as ingenuous romancers, or, perhaps, a few as ſelf intereſted cheats and impudent impoſtors.

When after cloſe attention and drudgery of reading through unwieldy volumes, we review the jarring dogmas of medical ſectaries, we cannot help being ſurpriſed at the wretched reaſoning and flights of invention, which have been the objects of ſo much ſuperſtitious admiration. In the rude ſtate of ſcience and medicine, ſome demon was thought to torment men and to inflict diſeaſes: this gave birth to ſuperſtitious remedies and incantations. Upon the ſame principles Providence was appealed to in the dark ages of Europe, as the only arbiter of right and wrong; hence the ordeal of fire and water. The ruſtic people were ſo credulous and ſuperſtitious as to believe, that the general laws of Nature would be ſuſpended, and that the Divine Being was to interpoſe upon every trifling diſpute, to give victory to the ſide of truth. Hippocrates and the Greek ſages had recourſe to the depravity or redundance of the four ſuppoſed primary elements or humours,

mours, blood, phlegm, yellow and black bile. With the methodic and dogmatic ſects at Rome, little atoms blocking up the pores, or ſtricture and laxity of the extreme veſſels, and muſcular fibres, continued the triumphant ſyſtems during two centuries, until Galen knocked this nonſenſe on the head, and once more reſtored the four humours to their former rank and activity. But it was only ſubſtituting error for error: all are equally falſe. Galen's theory, however, was idolized by the ſucceeding Romans, Greeks, and Arabians, and throughout the ages of gothic and eccleſiaſtic barbarity, and for a conſiderable time after the revival of literature in Europe. Such was the jargon which ignorance and credulity revered for ages, and called by the name of theory and philoſophy.

The moderns have drowned medicine in a ſea of theory, and have out-done Plato, Ariſtotle, Galen, and all the ſubtle doctors of antiquity. They babble inceſſantly about hoſtile acids, alkalies, ſulphur, acrimony, ſpiculæ, and ſalts of various ſizes; of turgeſſence, effervеſcence, deſpumation, and plethora, either general or partial; of dyſcraſies, quarrels, antipathies, and courtſhips of the animal ſpirits; of lentor or viſcidity in the blood, nervous fluid, bile, and pancreatic juice, of obſtruction, coagulation, ſtagnation, diſſolution, malignancy, and ſcorbutic cacoethes of the fluids; of ſpaſm, tenſion, and flaccidity of the ſolids, &c. Theſe are a few of the principal ingredients infuſed into modern medical writings; they are the ſublimated and viſionary reveries of the chymical and mechanical ſects.

It may be remarked, that to whatever ſcience or object Phyſicians particularly directed their attention, this they generally interwove in the theory of diſeaſes. The Anatomiſt pretended, that by diſſecting the ſmall minute fibres, he ſhould reach the cauſe and receſſes of diſeaſes, and learn the method of cure; the Chymiſt applied what he ſaw to take place in his bottles, crucibles, furnaces, and other extraneous experiments, to the human body, its diſeaſes, and the operations of medicines. Others formed a medley or patchwork, compoſed of ſhreds and fragments pilfered from different ſects. The generality of theoretical ſyſtems reſt upon a few flimſy materials, on ſcanty or doubtful phænomena, the falſity of which time and experiment have demonſtrated. Even now a great part of Boerhaave's theory of the proximate cauſes of diſeaſes is nearly exploded; the theories of Hoffman and Stahl are likewiſe approaching to their ſepulture. This alone ſhould be a leſſon to humble vanity, and to make men more cautious and modeſt.

The ſcience and theory of Aſtronomy is derived from confirmed and reiterated obſervations of general laws, and invariable phænomena. All the different aſtronomical leaders have one univerſal ſtandard of their opinions, and agree almoſt unanimouſly in the facts or data. Locke in developing the ſprings and action of the human mind, reaſoned from incontrovertible principles and proofs. On the other hand, in phyſick, and above all, in the different theoretical ſyſtems, numerous data are yet unſettled and contradictory. In attempting to ſolve various intricate phænomena in phyſiology, pathology, and in the operations of medicines, theoriſts have racked their brains to very little purpoſe, and are bewildered in labyrinths of error. Had theſe extravagancies of heated imaginations been confined to mere objects of ſpeculation, we might have regarded them as harmleſs novels; but unfortunately the choice of medicines and the cure of diſeaſes have been ſcandalouſly perverted and abuſed to ſupport the dogmas, and monſtrous abſurdies of the different ſects.

Medical theoriſts inſtead of walking have attempted to fly, and have thought it neceſſary to account for all difficulties methodically and philoſophically. In other reſpects, they have acted ſimilar to the two ſects of Greek and Latin Chriſtians, when Conſtantinople, their capital, about three hundred years ago, was beſieged by the Turks: inſtead of oppoſing a formidable and barbarous enemy at their gates, the weak Emperor and his metaphyſical ſubjects were then warmly engaged in rancorous diſputation about the immaculate conception, and whether maſs ſhould be ſaid in Greek or Latin. The analogy is too obvious.

A General Review *and* Comparison *of the* Ancients *and* Moderns; *and ſome* General concluding Reflections.

IT will detain us a very ſhort time to take a tranſient glance at the comparative progreſs of arts and literature amongſt the Ancients and Moderns. The ancients firſt founded the original rudiments of moſt of the arts and ſciences, and pointed out to us the road: by inheriting their accumulated experience we were ſet forward many ages, when without ſuch aſſiſtance we ſhould in all probability have yet groped but a ſhort way in the dark. The ancient Greeks and Romans might probably diſpute the palm with the moſt enlightened modern Europeans in dignity, force, and elegance of language, in poetry, in hiſtory, and in oratory. For the ſublime part of the mathematicks, the elements of geometry, we are indebted to the Greeks: Pythagoras, Euclid, and Archimedes were excellent mathematicians; from them we learned trigonometry, and the menſuration of the triangle, by which all other figures are meaſured. In ſculpture the Greeks far excelled us. The five Greek and Roman orders of architecture have not yet been improved upon either as to ſolidity or beauty. In naval architecture, however, they are greatly out-ſtripped by the moderns. In aſtronomy we have left them at a prodigious diſtance, and have given a new creation to the planetary ſyſtem. In painting and in muſick we have out-done our ancient maſters. The ſcience of variegated modulation and counter-point is a diſcovery of the moderns. Muſick, both in the ſcriptures and the Greek authors, is mentioned as a remedy in the cure of ſeveral diſeaſes. The Art of Printing is another ſuperlatively important invention of the moderns.

To attain all the knowledge of antiquity, through a revolution of fifteen hundred years, in every branch of medicine and ſurgery, we have only to conſult Hippocrates, Ariſtotle, Theophraſtus, Cælius Aurelianus, Areteus, Celſus, Dioſcorides, Pliny, Galen, Ætius, Alexander Trallianus, P. Ægineta, Rhazes, Avicenna, and Albucaſis. Even of this ſmall library, a peruſal of a great part of their works might, *at this day*, be diſpenſed with by ſtudents and phyſicians, except as objects of curioſity. Their anatomy and phyſiology was as defective and imperfect as their geography and ſkill in navigation. Medical chymiſtry and remedies were not dreamt of by the Greeks and Romans. In pneumaticks, hydraulicks, hydroſtaticks, and almoſt every branch of phyſicks, or experimental philoſophy, the ancients had emerged very little beyond groſs ignorance. The exiſtence and energy of a new and active element, the electrical fluid was alſo concealed from them. Their philoſophy chiefly contains ſome vague conjectures on the nature of the ſoul, and ſome admirable charts of the moral duties. Botany or the general knowledge of plants were then in their infancy. From the vegetable claſs the moderns have likewiſe derived ſeveral new and powerful remedies. The merit of diſcriminating diſeaſes from each other belongs to the ancients. Except a few new diſeaſes ſince imported from Arabia and America, the Greeks and Romans have left behind them tolerable deſcriptions of every diſeaſe now known: yet we are not to imagine that in the diagnoſticks they are without faults and defects. In the prognoſticks alſo they marked accurately the preceding and concomitant ſymptoms of criſes; but in many diſeaſes they were unprovided with weapons ſufficiently powerful to avert the mortal iſſue and funerals which they could predict. In underſtanding the pathology of diſeaſes, whether from external or internal cauſes, we are greatly ſuperior to our old maſters. That knowledge acquired by bills of mortality is peculiar to the moderns. Obſtetricks and ſurgery amongſt the moderns have likewiſe made very conſiderable progreſs towards perfection.

In the *cure* of ſeveral acute and chronic diſeaſes we can claim little, if any, ſuperiority, above the ancients. Many inſtances might be pointed out where their curatory precepts have been precipitately rejected, or neglected for others of inferior efficacy. In the "Methodus Medendi," we have not made thoſe rapid ſtrides by modern diſcoveries in anatomy and phyſiology, chymiſtry, botany, &c. which might at firſt be ſuppoſed, and naturally expected. For inſtance, convulſions, conſumptions, aſthma, apoplexy, palſy, epilepſy, madneſs, ſcrophula, dropſy, internal aneuriſm, cancer, gangrene, and mortification, ſtill remain as difficult of cure, notwithſtanding the ſtructure and phyſiology of the brain, nerves, lungs, glands, blood veſſels, circulation and perſpiration are ſo well underſtood, and the component parts of the human fluids and ſolids ſo minutely ſcrutinized by chymiſtry.

I HAVE not the moſt diſtant intention to depreciate the baſis of medical ſtudies, anatomy; it is the geography of medicine. All that I mean to inſinuate is, that Phyſicians ſhould not be totally abſorbed in any one ſubordinate branch of medicine, whether anatomy, chymiſtry, phyſick, botany, or any other, as if by that means alone they could cure diſeaſes. The attention of the moderns hitherto has been principally ingroſſed by theſe preliminary branches, and by theory: the tide and current of inquiry has run in thoſe channels; whereas they merely conſtitute the alphabet of medicine. In previouſly acquiring at ſchools the dead languages of Greek and Latin, with ſome modern languages, and other neceſſary ſciences and polite accompliſhments, and afterwards at univerſities the introductory rudiments of the different branches of medicine, nearly *one third of life* is ſpent. After this period, and gleaning all the practical knowledge contained in books, medical men ſhould attend to the active and uſeful part of the profeſſion, “ to the lædentia & juvantia,” to the diſcovery of remedies, and the diminution of mortality ; and like aſtronomers to ſettle facts in their progreſs. Here are many defects and openings to be filled up, a “ hiatus valde deflendus,” we are yet far diſtant from the goal, and there is abundant ſcope for emulation and improvement. It is greatly to be regretted, that not one Phyſician in a thouſand makes a ſingle diſcovery, nor adds an iota of information to the Medical fund, but jogs on in the beaten rotines and repetaturs, and like the bulk of academic doctors barely keeps alive what is already known. New facts and original obſervations of utility are very thinly ſcattered even in authors of great renown. The labour, indeed, of regularly peruſing a multitude of authors, even of many of thoſe who made ſignal diſcoveries, may be conſiderably retrenched ; we can find new and correct maps which render the old of leſs value. Large libraries of ſelect books can only be conſulted as dictionaries on particular emergencies.

Phyſicians ſhould not deſpair of greatly extending the ſublime part of the medical ſcience, the diminution of mortality. We ſee antimonials, and Peruvian bark cure agues, and ſome other genera of fevers, and mercury the venereal diſeaſe ; the ſimple herb plantain blunts the venomous bite of the rattle ſnake, which would otherwiſe prove quickly mortal ; a little ſalt is ſaid to deſtroy the deadly poiſon of the manchinel tree ; a ſmall quantity of freſh vegetables or fruits correct the general putreſcency of the blood and humours in the ſcurvy; the virtues of many plants are yet unknown; from the vegetable, mineral or animal kingdoms, and from philoſophy, after a variety of trials and experiments, remedies may poſſibly be yet diſcovered to cure ſeveral fatal diſeaſes, with as much certainty and ſucceſs, as we now cure intermittent fevers, or the venereal diſeaſe; ſome means may be found out to check, or perhaps to annihilate the pernicious effects of that ſubtle poiſon conveyed in different ſpecific contagions: the mortality of infants in cities we know to a certainty may be prodigiouſly diminiſhed.

OUR medical knowledge and grave meditations are of little ſignification to mankind, if we do not acquire the means of healing and of preſerving lives. Ingenious theories are of no uſe to ſick and diſeaſed perſons. The profeſſors of medicine ſhould not be diſtinguiſhed by the ſubtilty of their philoſophical ſpeculations, but by their public utility. Many chronic diſeaſes I know are not to be removed in a few days, weeks, or even months; freſh and temperate air, different diet and exerciſes, medicated mineral waters, baths, and agreeable amuſements are all powerful remedies. I am not ſo credulous and ſanguine, as to expect, that with a few ſpecific medicines we ſhall be able to cure all diſeaſes; on the contrary I am perſuaded, that in many diſeaſes drugs, either unſkilfully adminiſtered, or out of ſeaſon, do more harm than good, and that ſeveral fall ſacrifices to too much care and phyſick; neither do I wiſh to claim affinity with the Alchymiſts, and to flatter myſelf, that we can reverſe the general laws of Nature, and make man immortal. I truſt, however, and believe, that medical and even ſurgical knowledge in the cure of corporeal infirmities, and in the prevention of mortality, is very far remote from perfection. We ſhould be cautious of pronouncing upon poſterity; the greateſt part of Europe (Greece, Sicily, and Italy excepted) is but a few centuries emerged from ruſticity and barbariſm, from original chaos and ignorance in ſcience and arts as old as the axis of the globe. Important improvements are ſtill reſerved for the preſent, and for future generations.

The laſt features in the hiſtorical ſketch of medicine, with which I ſhall finiſh this rough outline, are modern medical manners. A wiſe and a witty Author truly ſaid, "that the hopes of gain "and lucre, and different employments of men, "ſhape them into a variety of ſtrange forms." In the 16th and part of the 17th century, the learned profeſſions were diſtinguiſhed by a number of abſurd cuſtoms, and carried the affectation of ſuperlative wiſdom to a ridiculous extreme: their garb, gait, and geſtures were groteſque, and reſembled that of magicians and conjurors: the Phyſician was diſguiſed under a grave and ſolemn countenance; he was capariſoned in an enormous wig, a full trimmed coat buttoned to the bottom, and other extravagant paraphrenalia. The introduction of more liberal ideas, and above all dramatic ſatire, enforced by ſtage exhibitions, have contributed to free the public from this ſcholaſtic pedantry and ſtupid pompoſity; to baniſh from ſcience dunces and artful cheats, concealed under the maſk of wiſdom and cloak of gravity. The penſive look is now leſs ſtudied, and the manners become leſs ſtiff and ſupercilious; it is no longer thought neceſſary, in order to appear a man of deep learning, to reſemble a profeſſor of necromancy, a lethargic philoſopher of Laputa, or a ſcientific monſter; nor, as has been reported of ſome old Spaniſh Phyſicians, to carry ſpectacles conſtantly ſaddled upon the noſe, to ſhew, that by laborious application, intenſe plodding, and nocturnal lucubrations over books, their eye-ſight was impaired. At preſent in this iſland, Weſtminſter-hall, if not in technical cant, at leaſt in their habiliments and faſtidious deportment, retain more of this ſcholaſtic ruſt, and ſolemn mummery, than the Medical college.

I have now arrived at a concluſion, and in this I fear too imperfect ſtate, have ventured to expoſe the ſkeleton of Medical hiſtory. Throughout I have endeavoured to ſeek for important truths and diſcoveries without prejudice or biaſs, and to direct the attention to objects intereſting to mankind. Wherever I have erred, I bow obedient to correction and conviction, and ſhall be glad to be better inſtructed. Should the preſent compendium be thought of any utility to Medical ſtudies, I am at preſent employed in forming a Chart of Authors, in ſome diſtant imitation of Dr. Prieſtly's and other chronological, hiſtorical, and biographical charts; in which, at one proſpect, and on a ſingle map, will be arranged, and preſented in chronological review, all the eminent authors in every branch of medicine, and in which the catalogue of names will be very conſiderably multiplied.

POSTSCRIPT.

MY firſt intention was to have publiſhed a ſeparate Chart, and upon a larger ſcale. Some friends, however, whoſe judgment I reſpect, are of opinion, that even in its preſent crude ſtate, it may be acceptable to the readers of the preceding compendium, I offer it to their peruſal with all its imperfections, and with great diffidence. It may, perhaps, aſſiſt ſome readers in groping their way through a miſt of ancient and modern writers. In a new attempt of this difficult nature, errors and defects muſt be expected, and poſſibly a few eminent Authors are overlooked; but I truſt it will be found, that the proportion of good authors omitted, is a mere fraction in compariſon to thoſe inſerted. The original idea of a Chart was ſuggeſted to me by my worthy and learned friend, Dr. James Sims, to whoſe kind aſſiſtance I am indebted for ſeveral additions and corrections.

The Titles of each branch of Medicine are marked in the ſeparate Diviſions at the beginning, and the Authors on each branch are continued in chronological progreſſion, acroſs the Chart. The latter or lower part conſiſting of three centuries, it is obvious, is a continuation of the upper. The Numbers or Years at the top diſtinguiſh the chronology or century of the Author's publication: his birth and death I have not attempted to explore. In ſo contracted a ſcale, to enter into more minute diviſions than one century, was impracticable. Again, ſeveral Authors have written in the end of one century, and in the beginning of the following, and might, therefore, with equal propriety, be placed in either. Let it alſo be obſerved, that, in the writers of the *ſame century*, I have not always attended to the *exact* chronological precedence of each; on the contrary, I have, in ſeveral inſtances, offered a petty violence to chronology, and have arranged together, a cluſter of writers (*of the ſame century*) from ſome ſimilarity in the ſubject or matter of their publications. When we look a few centuries back, fifty years interval between publications appears of no more conſequence than fifty days in the preſent era. Perhaps an alphabetical and chronological Index of the Authors would bring the Chart nearer to maturity and perfection. Another obſervation I wiſh to be imprinted on the readers memory is, that no Author's name is introduced a *ſecond* time under any ſingle Diviſion or branch of Medicine, however general and diffuſive his writings may be on that particular branch; but ſhould the ſame Author alſo excel as a writer on any other detached branch of Medicine, there I have likewiſe introduced him a ſecond time: ſuch repetitions, however, are not altogether numerous.

THE Chart, as to the Chronology, commences 400 *years* only *before Chriſt*. It was impoſſible in ſuch confined limits to have ſtrayed further back to the fabulous ages of Medicine, or even to Eſculapius, whoſe era is 950 years before the Chriſtian; and to fill the chaſm of the five following centuries, we ſhould have had very little more than Eſculapius's two ſons, and the fabulous genealogy of that family down to Hippocrates. Empedocles, Acron, and Herodicus would be ſtationed in the century prior to Hippocrates, and merely as the ghoſts of publications long ſince extinct. So far as reſpects the immediate Medical and Surgical Authors down to 1500, the Chart is, I believe, tolerably full and accurate. The Punctum, or Period (.) at the end of ſeveral ancient authors names, during the firſt ſix centuries, is meant to ſignify that their works are loſt. I could with great eaſe have ſwelled the liſt of writers, who ſucceeded the Arabians, more eſpecially during the 15th, 16th and 17th centuries; but, multitudes of theſe being tranſlators, compilers and commentators, I thought it of no uſe to overwhelm the reader in a cloud of unprofitable names. The old Latin proverb, "Parturiunt montes naſcitur mus," is here extremely applicable. Throughout the three laſt centuries, my principal care and difficulty was ſelection.

The ſecond Diviſion of Chymiſtry and Natural Philoſophy opens a ſpacious field, in the ſurvey of which, I have intentionally circumſcribed myſelf to a very narrow path. The Aſiatic and Egyptian ſkill in Chymical and Alchymical experiments has been celebrated by Olaus Borichius, and many other panegyriſts, who have traced it even to the antediluvian age. I begin with a few only of the earlieſt Alchymiſtical writers, whoſe works yet ſurvive. During the laſt 1500 years, Authors have been able to collect no leſs than 5000 printed publications, excluſive of manuſcripts, on Chymiſtry and Alchymy. Of theſe, a ſmall ſelect liſt, and principally of the more immediate benefactor to Medicine, is here introduced.

The Diviſion of writers in Natural Philoſophy, taking the term in the moſt comprehenſive ſenſe, is much more mutilated than even the preceding. To have embraced the great men who reared up this ſublime ſcience, I ſhould have united Mathematicks, Mechanics, Arithmetic, and Aſtronomy, to Hydraulics, Hydroſtatics, Pneumatics and Electricity; the four laſt diviſions or branches of which are properly the fruits of modern genius and ſtudy. Beſides, to have reached the primary ſources of Aſtronomical obſervations, I ſhould have travelled back to the ancient Egyptians and Chaldæans. Several of the ancient Greek Mathematicians and Aſtronomers, for inſtance, Pythagoras, Meton, and Euctemon, flouriſhed before Hippocrates; Euclid, Archimedes, Hipparchus and Ptolemy are poſterior to him. Had I, therefore, undertook to preſent a compleat chronological Chart of theſe eminent Philoſophers, I ſhould have been under the neceſſity to have continued the chain throughout the Arabian, and throughout the modern Mathematicians and Aſtronomers. For medical purpoſes, however, I thought it ſufficient to exhibit a few of the ancient and modern great founders of Mathematical and Aſtronomical ſyſtems; a few of the principal modern promoters of Natural Philoſophy, eſpecially of thoſe whoſe works tend to illuſtrate ſome parts of the human Phyſiology, or ſome other branch of Medicine, ſuch, for example, as writers on Hydroſtatics, Hydraulics, Pneumatics, Optics and Electricity; and I have alſo added a few ſelect general Compendiums and Abridgements of theſe Sciences.

Learned Societies do not commence before the 17th century. Had the authors names, who contributed their mites to theſe immenſe magazines of knowledge, been inſerted and arranged, ſuch a catalogue alone would fill a large Chart. This capacious Diviſion comprehends a miſcellaneous claſs of excellent writers and detached treatiſes on all the Arts and Sciences, and is equally allied to all: unleſs therefore the papers of each, ſo far as regards Medicine, are not likewiſe collected and printed in detached publications, I have left them amongſt their learned brethren, to be peruſed either in the originals, or in general abridgements. The Medical papers diſperſed throughout the Philoſophical Tranſactions, have been extracted and printed together, in a ſeparate publication by Dr. Mihles; and it is devoutly to be wiſhed, that the medical eſſence diſperſed throughout the other learned Collections, was concentrated into a ſmaller volume.

In ſelecting the writers on Natural Hiſtory and Botany, I was favoured with the aſſiſtance of a learned friend and member of the Royal Society, Dr. Robert Scott. Several Voyages and Travels might have been added to the collections of Natural knowledge; and to Botany, the diffuſive writers on Agriculture and Gardening. The additions made in the Chart to Botany, are principally diſtinguiſhed collectors of Plants from various regions of the globe, and a few who have deſcribed the Plants, collected in large Botanic gardens.

UNDER the Diviſion of Materia Medica and Pharmacy, I have alſo arranged, in a ſeparate cluſter, the writers on Mineral waters; the latter of which, in the body of the volume, had been claſſed with the Practical writers. My reaſons for this trifling alteration were, that the phalanx of Practical writers was exceedingly crowded; and indeed the writers on Mineral waters may, with equal propriety, be aſſembled with thoſe on Materia Medica.

THE laſt Diviſion contains the Hiſtoriographers, and the catalogue of writers on one or more of the different branches inſerted in this Chart. Herodotus being a century prior to Hippocrates,could not be introduced. This collection will greatly facilitate any future attempts of a ſimilar nature to the preſent work; and that every avenue to information might be opened, I have here added the principal Literary Reviews of Europe. The crowd of Biographers, who have written the lives of various eminent Phyſicians in different nations, are excluded from this Chart: an inſtructive and uſeful Book is the beſt Panegyric, and moſt durable Memento in the Temple of Fame. Along the baſe of the Chart, ſtand Lexicons and Dictionaries.

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ERRATA & ADDENDA.

Page 11, Line 19, *for* Chaldæans *or* Prieſts, *read* Chaldæans *and* Prieſts of Babylon.

— 45, — 26, *for* Heraclides the diſciple of Ariſtotle, *r.* the diſciple of Mantias.

— 65, — 6, *for* copied upon, *r.* copied from

— 70, — 30, *for* a warm ſulphureous vapour, *r.* a warm vapour.

— 84, — 2, for Saumaiſe, *read* Salmazius.

— —, — 13, *after* Nitrous, *r.* warm.

— 105, — 12, *for* Tubalcain *and* Vulcan, *r.* Tubalcain *or* Vulcan.

— 167, — 14, *after* Haller's, Boerhaave's Methodus diſcendi artem medicam, *add* and in his various and voluminous Bibliothecas.

— 182, — 14, *read* into the extreme juncture or angle of the Subclavian and Jugular veins.

— 190, — 29, *for* thoſe, *r.* that.

— 223, — 20, Gaubius ſhould be claſſed with the writers on Pharmacy.

— 282, — 10, Chapman and Giffard are, by miſtake, placed in the 17th century, inſtead of the 18th.

— 304, — 16, *for* Phyſick, *r.* Phyſicks.

N. B. A few proper Names erroneouſly printed, are corrected in the Chart.